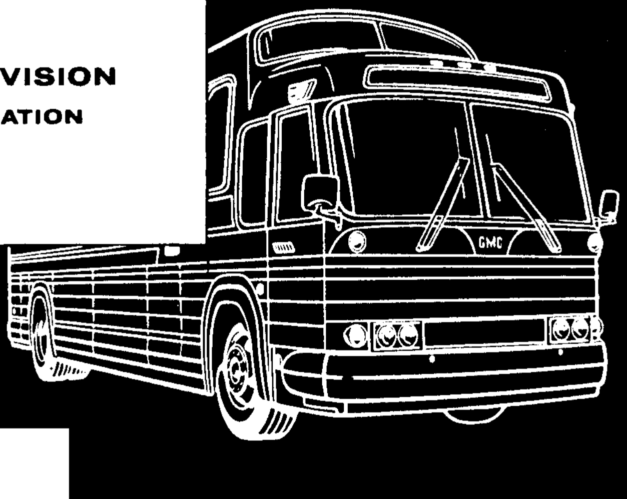
X-7007

GMC
COACHES

MODELS

PD-4108
PD-4905

Operating Manual



GMC TRUCK & COACH DIVISION
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TO THE OPERATOR OF THE

PD-4108 and PD-4905 Coaches

This operating manual has been prepared to acquaint you with the necessary information to properly operate this coach and to provide maximum comfort and safety for your passengers.

No attempt has been made herein to teach you the skill of driving, rules of the road, or requirements of the D.O.T., as you should be instructed in these phases by your Operating Company.

Some of the procedures explained herein pertain to special equipment items which you may or may not be concerned with. Complete knowledge of your vehicle's equipment and the operating procedure of same will add to your skill as an operator.

Report any malfunction or condition which may hinder satisfactory operation of coach to responsible personnel for their immediate attention.

DRIVING CONTROLS

All controls, gauges, and switches used to drive the coach and to control lights, heating, and air conditioning are arranged in what is generally termed as the "Operator's Compartment." All of these controls are readily accessible to the operator while he is in the driver's seat.

IMPORTANT: This manual describes the use of all standard and most commonly used special equipment operating controls. However, some Operating Companies specify other special equipment and/or modifications to standard equipment controls. When this other special equipment and/or modifications affect operating instructions as described herein, it is the responsibility of the Operating Company to provide their drivers with the necessary instructions, and the responsibility of the drivers to acquaint themselves with all controls and their operation.

First—Know your controls

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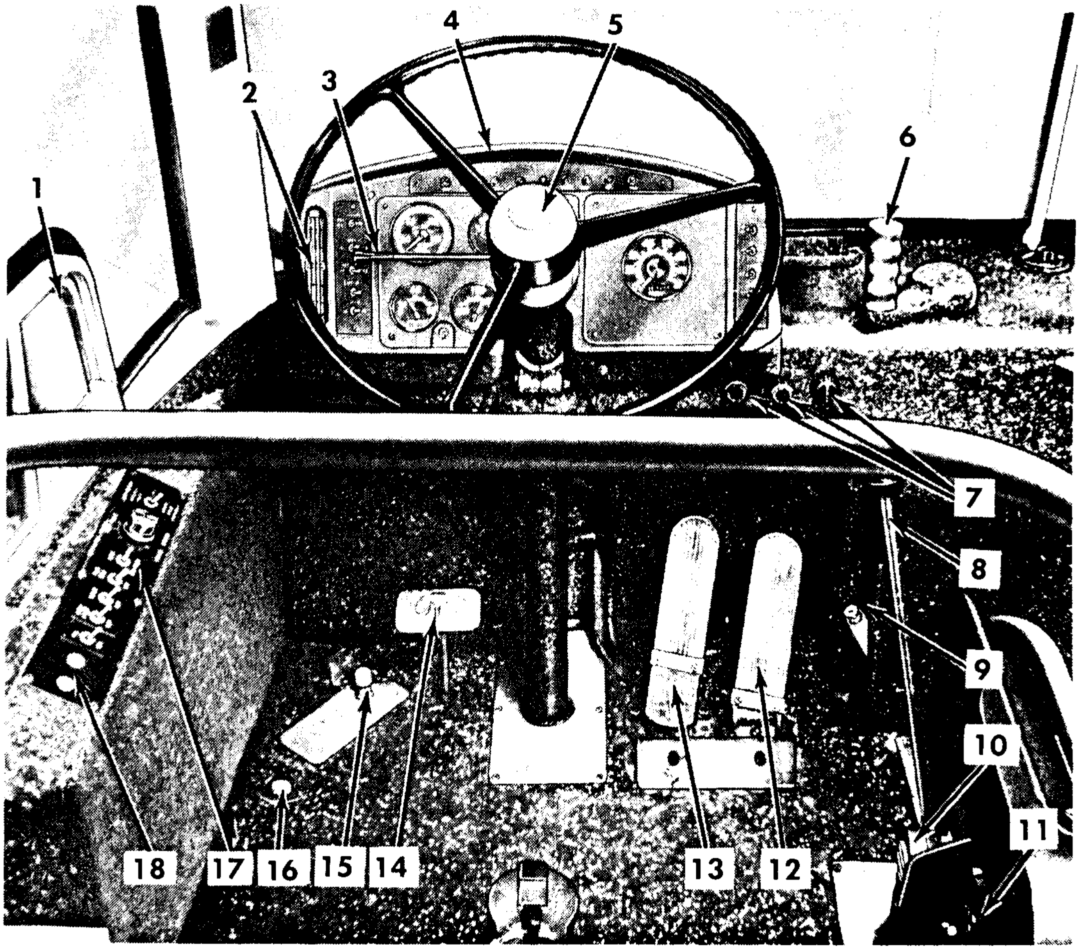
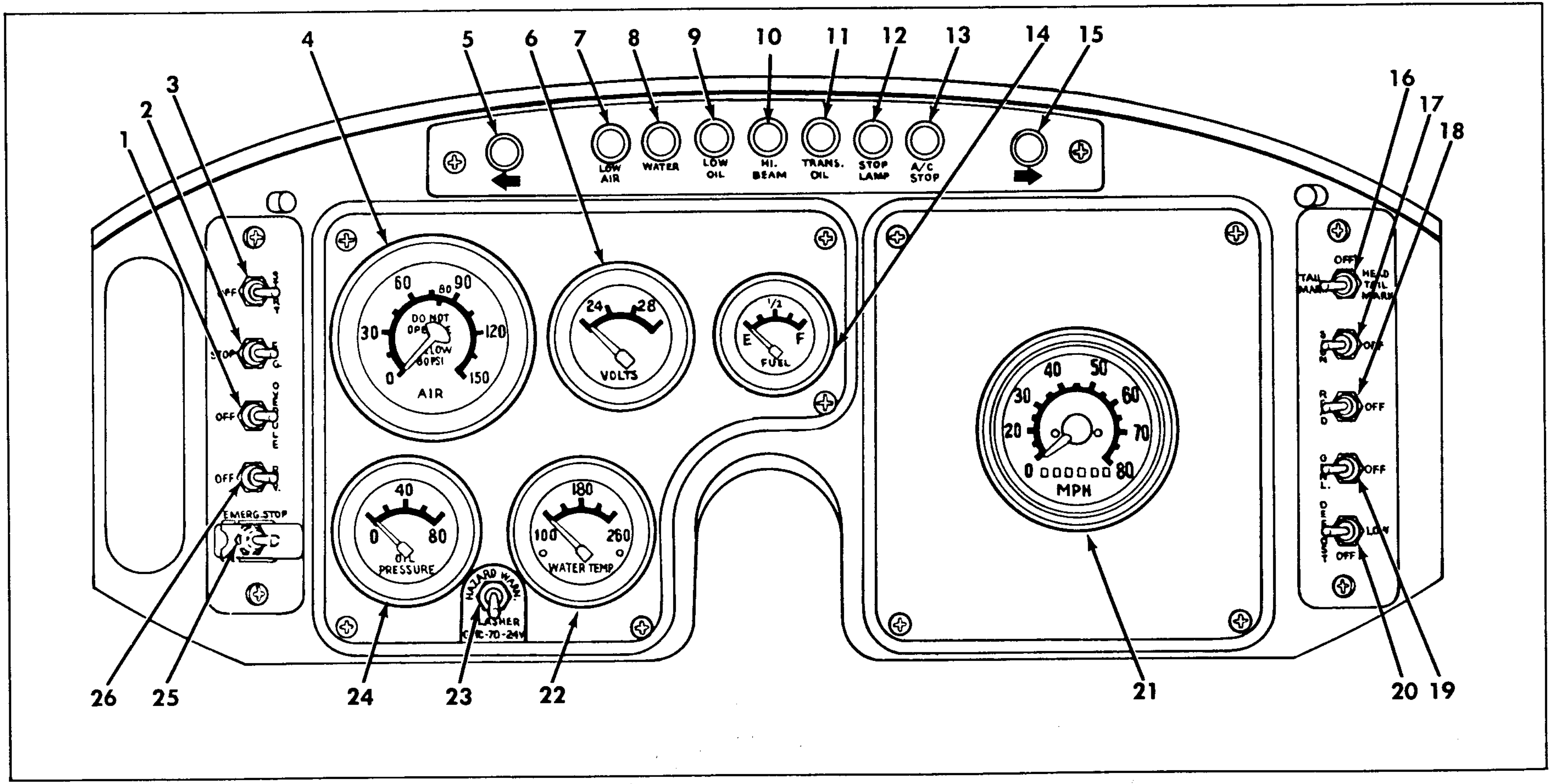
THE OPERATOR'S COMPARTMENT



Operator's Compartment and Driving Controls (Typical)

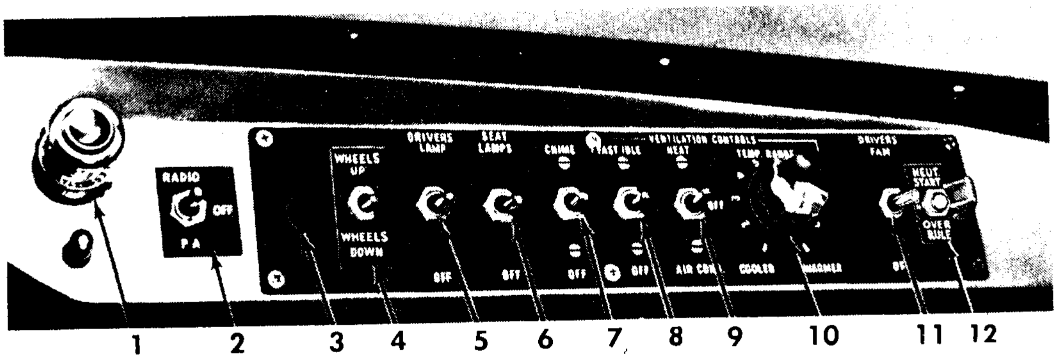
Item	Name	See Page
1.	Signal Window	6
2.	Air Outlet	21
3.	Directional Signal Switch	19
4.	Gauge and Tell-Tale Panel	2
5.	Electric Horn Button	
6.	Entrance Door Control Handle	34
7.	Windshield Wiper and Washer Controls	7
8.	Transmission Shift Lever	13
9.	Defroster Heater Control Valve	7
10.	P.A. Microphone	8
11.	Parking Brake Control Valve	15
12.	Accelerator Pedal	
13.	Service Brake Treadle	15
14.	Clutch Pedal	13
15.	Head Lamp Dimmer Switch	17
16.	Air Horn Button	
17.	Control Panel	4
18.	Radio & P.A. Controls (when used)	8

GAUGE AND TELL-TALE PANEL



Item	Name	Use	See Page
1.*	"OVERRULE" Switch	To overrule engine automatic shut-off system	12
2.	"ENG." Switch	To control engine	8
3.	"START" Switch	To start engine	8
4.	"AIR" Gauge	Indicates air pressure in system	10
5.	Turn Signal (Left Tell-Tale)	Flashes on and off when left turn signal or emergency flashing systems are operating	19
6.	"VOLTS" Gauge	Indicates battery state of charge	11
7.	"LOW AIR" Tell-Tale	Lights when air pressure is low	10
8.	"WATER" Tell-Tale	Lights when cooling system temperature is high	11
9.	"LOW OIL" Tell-Tale	Lights when engine oil pressure is low	10
10.	"HI BEAM" Tell-Tale	Lights when headlight high beam is used	17
11.	"TRANS OIL" Tell-Tale	Lights when transmission oil pressure is low	13
12.	"STOP LAMP" Tell-Tale	Lights when service brakes are applied	15
13.	"A/C STOP" Tell-Tale	Lights when air conditioning system has failed	20
14.	"FUEL" Gauge	Indicates amount of fuel in tank	11
15.	Turn Signal (Right Tell-Tale)	Flashes on and off when right turn signal or emergency flashing systems are operating	19
16.	Light Switch	Controls head, tail, and marker lights	17
17.	"SIGN" Switch	Controls destination sign lights	18
18.	"READ" Switch	Controls reading lights	17
19.	"GENL" Switch	Controls general overhead lights in package rack	17
20.	"DEFROST" Switch	Controls defroster heater fans	7
21.	"MPH" Gauge (Speedometer)	Indicates vehicle speed	11
22.	"WATER TEMP" Gauge	Indicates temperature of Water	11
23.	"HAZARD WARN." Switch	Controls emergency flashing system	37
24.	"OIL PRESSURE" Gauge	Indicates engine oil pressure	10
25.	"EMERG STOP" Switch	To stop engine, in event it fails to stop when "ENG" switch is placed in "STOP" position	12
26.	"REV" Switch	To select transmission reverse position	14

THE CONTROL PANEL



Control Panel at Left of Operator (Late Model Shown)

Item	Name	Use	See Page
1.	*Volume Control	Controls radio and P A system volume	8
2.	*"RADIO" and P A Switch	To select either radio or P A	8
3.	*Spare Switch Location		
4.	*"WHEELS DOWN-UP" Switch	Controls retractable axle (4905)	29
5.	*"DRIVER'S LAMP" Switch	Controls driver's lamp	6
6.	*"SEAT LAMPS" Switch	Controls seat lamps	
7.	"CHIME" Switch	Controls passenger signal	8
8.	"FAST IDLE" Switch	Controls engine fast idle	10
9.	"HEAT-AIR COND." Switch	Controls heating and cooling system	20
10.	"TEMP RANGE" Control	Controls coach temperature	20
11.	*"DRIVER'S FAN" Switch	Controls fan on windshield	6
12.	"START OVERRULE" Switch (a)	Overrules Neutral Start Switch	9

*Special Equipment (a) Late Models Only

OPERATING ALARM SYSTEMS

Coaches are equipped with alarm systems which instantly signal various abnormal conditions by means of tell-tale lights and/or buzzers. Tell-tale lights, located at top of instrument panel, illuminate and display name of condition when condition occurs. Buzzer units, located in control panel apparatus box at left of operator, sound an audible alarm to also signal some abnormal conditions in addition to tell-tale lights. Information on alarm systems, as well as necessary actions to take, are outlined in applicable sections of this publication as indicated below:

Condition	Audible Alarm	Tell-tale Light	Refer to Page
Engine low oil pressure	Buzzer	"LOW OIL"	10
Engine overheated	Buzzer	"WATER"	11
Transmission low oil pressure	None	"TRANS OIL"	13
Low air pressure	Buzzer	"LOW AIR"	10
Air Conditioning stopped	None	"A/C STOP"	20
Directional Signals on	None	Arrows	19
Stop lamps on	None	"STOP LAMP"	15
Head lamp high beam	None	"HI BEAM"	17

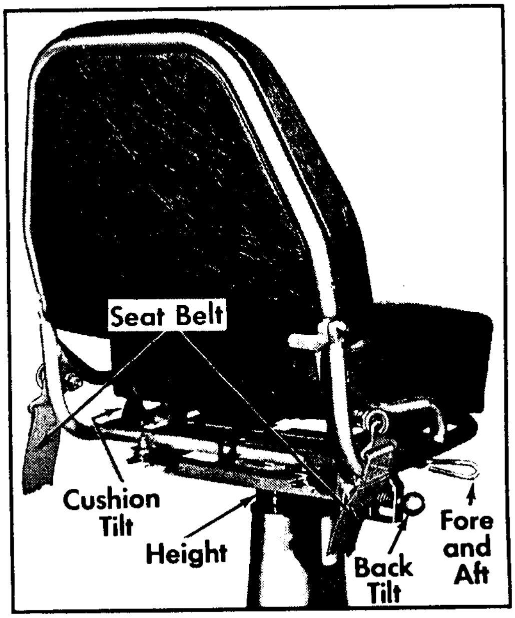
FOR THE OPERATOR

Operator's Seat

Operator's seat may be moved fore and aft after releasing lock lever at right of seat. When seat is positioned, release lever. Raise seat by grasping seat frame and pulling upward. To lower, raise completely, then lower.

Seat cushion may be tilted by turning knob at left to position seat at desired angle.

The seat back may be tilted forward and back by pulling out knob at right to release from notches. Release knob to engage a notch when back is positioned.



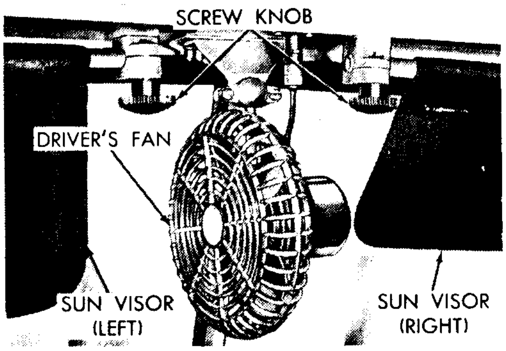
Driver Lap Belt

A lap type belt is provided for the driver's security and comfort. Proper use and care of this belt will assure continuance of this security. Before starting run, check belt and belt anchors to make certain everything is in proper order.

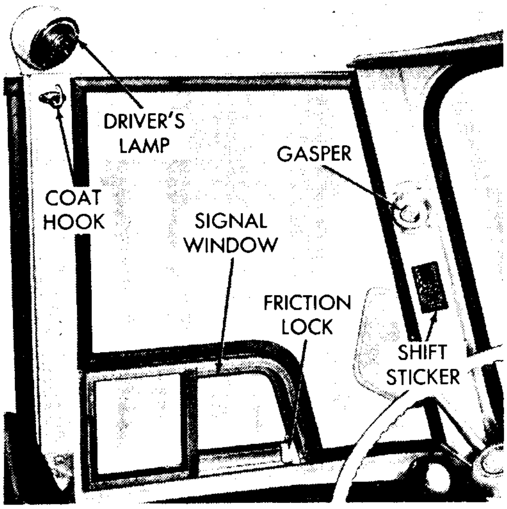
After the seat has been adjusted to the satisfaction of the driver, grasp the buckle end and the flat metal "eye" end of the belt assembly and position the belt across the lap as LOW ON THE HIPS AS POSSIBLE. Insert the metal "eye" into the open end of the buckle until an audible snap is heard. Make sure the connection is secure and adjust the belt to a SNUG FIT by pulling on the end of the belt protruding from the buckle. The "snug" and "low" positions are essential in order that the force exerted by the lap belt in a collision may be spread over the strong hip bone structure and not across the soft abdominal area. To release the belt, simply depress the release button located in the center of the buckle.

Caution: Avoid wearing a lap belt loosely.

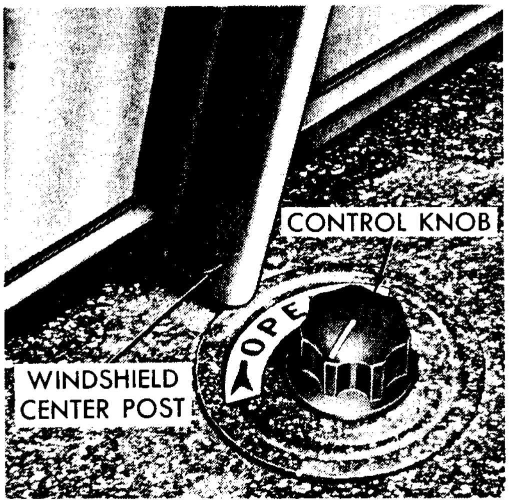
The lap belt should be kept clean and dry. If necessary to clean, use a mild soap solution in lukewarm water. Keep sharp edges and damaging objects away from belts. Periodically inspect belt and buckle for damage that could materially lessen the effectiveness of the belt installation. Repair or replace any questionable parts. **Do not bleach or dye belts, as this may cause severe loss of strength.**



Sun Visors and Driver's Fan



Signal Window



Air Vent Control

Windshield Sun Visors

The windshield left and right sun visors can be positioned manually by the operator. Loosen screw knob at clamp bracket to position visor. When screw knob is tightened, visor is secured in position.

Driver's Fan

The fan, above driver at center of windshield, is controlled by "FAN" switch on gauge panel in front of driver (item 11, page 4).

Operator's Signal Window

Forward part of window will slide to the rear to permit hand signals, etc. Pull friction lock and slide window to desired opening.

Driver's Lamp

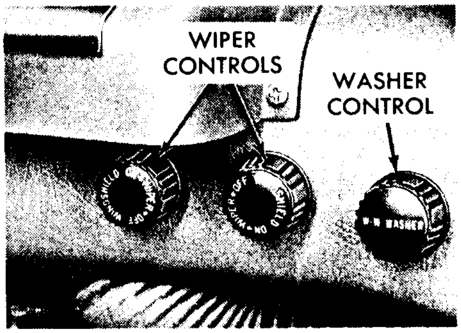
Lamp, mounted above driver at left, is controlled by "LIGHT" switch on control panel at left of driver (item 5, page 4).

Front Air Vent

A control knob in the top center of the dash panel opens a vent to permit outside fresh air into the defroster heater compartment. Turn knob clockwise to open vent. Fresh air will flow through the defroster heater and into driver's compartment. This air can also be directed upward to the windshield by turning on the defroster heater blowers.

WINDSHIELD WASHERS

Windshield washers, used on all coaches, are operated by control located on front panel under right end of instrument panel. Solvent supply reservoir is located in compartment at front left corner of coach as illustrated on page 41. Supply in reservoir should be checked each day.



Wiper and Washer Control

This washer system is air operated and automatically purges lines, both before and after spray cycle to positively eliminate possibility of frozen or clogged lines and nozzles. To operate system, push knob. Complete cycle is automatic.

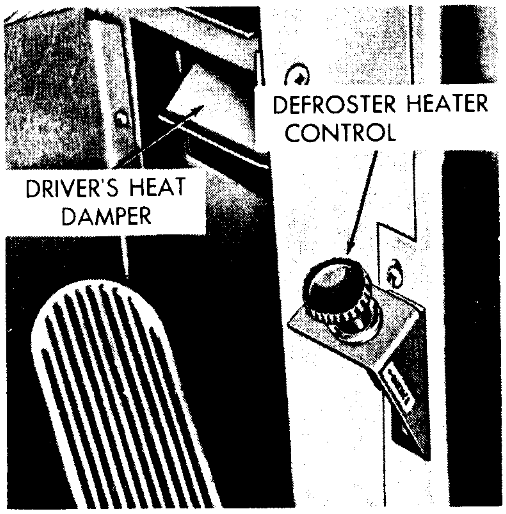
WINDSHIELD WIPERS

Air-operated windshield wipers are provided as standard equipment. Left and right wipers are controlled independently by air valves located on the dash below the gauge and tell-tale panel. To operate either wiper, turn knob toward "ON" to degree of blade speed desired. To stop, turn knob to "OFF." If blade does not stop at "PARK" position, turn knob ¼ turn toward "ON," then back to "OFF."

WINDSHIELD DEFROSTER

Defroster Fan

Windshield defroster fans are controlled by "DEFROST" switch on instrument panel (item 20, page 2). To operate fans, place switch in either "DEFROST" (high) or "LOW" position for speed desired. Air is directed over surface of windshield through openings in ledge. Warm air for the driver's compartment can be directed from defroster by means of a damper at left side of defroster compartment.



Defroster Control

WINDSHIELD DEFROSTER (Cont.)

Defroster Temperature Control Valve

Temperature of defrosting air can be regulated by the defroster heater control, shown at bottom of page 7. The control meters the flow of water through the defroster heater core. Valve is fully open with control knob pulled all the way up, and fully closed with control knob pushed all the way down.

NOTE: Heat can be obtained at the defroster heater any time the control knob is moved to "warmer" position. The engine water pump provides constant supply of warm water.

CHIME, PUBLIC ADDRESS, AND RADIO SYSTEM

Various types of public address systems may be used as special equipment. Controls shown (items 1 and 2, page 4) are typical for a combination radio and public address system. The P.A. system on-off control button is usually located on the microphone. Check operation of system and set volume control prior to starting a run.

Passenger chime signal to driver is operated by pull cords at top of coach side windows. "CHIME" switch (7, page 4) controls passenger chime system.

ENGINE OPERATION

Controls necessary to start and stop engine from the operator's compartment are mounted on the instrument panel in front of driver. These controls are:

"ENG" switch (item 2, page 2). This switch must be placed in "ENG" position when starting engine. Placing switch in "STOP" position stops engine.

"START" switch (item 3, page 2). This switch is a "momentary-on" type switch, and the switch must be held in "START" position to engage the starter. When switch is released, it returns to normal position.

"EMERG. STOP" switch (item 25, page 2.) This is a "momentary-on" type switch used to stop the engine in the event it fails to stop when "ENG" switch is placed in "STOP" position. Hinged guard over switch must be lifted up to use switch. The toggle handle must be pushed to "ON" to activate the emergency stop mechanism. Resetting of engine stop mechanism is explained on page 12.

GAUGES AND TELL-TALE LIGHTS (page 2). Oil pressure, air, volts, and temperature gauges, together with "LOW OIL," "WATER," and "LOW AIR" tell-tale lights, are located on instrument panel. A buzzer sounds when any one of the tell-tales is illuminated.

STARTING THE ENGINE

1. Apply parking brake and shift transmission into neutral. Make sure TRANSMISSION is in neutral, not just SHIFT LEVER in neutral position (see page 14). Always depress clutch pedal when activating starter. On late model coaches, if unable to obtain neutral position in transmission, and coach MUST be started, use Neutral Start Over-rule Switch, IN EMERGENCY ONLY.

2. Place "ENG" switch in "ENG" position. On coaches equipped with automatic shut-off system, engine must be started before safety control relay system can act.

NOTE: When "ENG" switch is placed in "ENG" position, "LOW OIL" tell-tale will light and buzzer will sound. "LOW AIR" tell-tale will light if air pressure is below 60-65 pounds and the "TRANS. OIL" tell-tale will light. Lights will remain illuminated and buzzer will sound after the engine has started until oil pressure is over 3 pounds and air pressure is above 60-65 pounds.

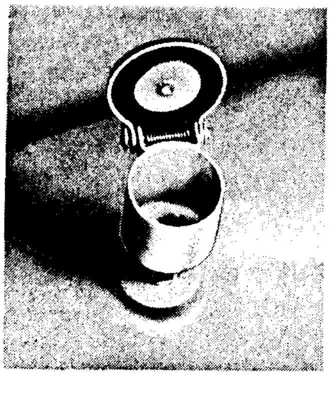
3. Depress clutch pedal. Push "START" switch lever to engage starter. Release switch lever the instant the engine starts.

CAUTION: Do not engage starter longer than 15 seconds continuously. If engine does not start at the first try, wait 10 to 15 seconds before second attempt. On coaches equipped with automatic shut-off system, "ENG" switch must be returned to "STOP" position during waiting period to prevent action of the safety control relay.

4. Refer to "Emergency Conditions" on page 38 for instructions regarding starting engine at rear of coach.

Cold Weather Starting

Some coaches are equipped with a cold weather starting fluid cup. When temperature is below 35°F., it may be necessary to use a starting fluid. This practice should be avoided unless absolutely necessary. If necessary to use starting fluid, use one 7 cc. capsule during above-zero temperature, or two 7 cc. capsules if temperature is below zero.



Starting Fluid Cup

To use the capsule, raise the cover of the small cup on the blower intake manifold and force the capsule down onto the pointed tube in the cup. Squeeze the capsule dry, remove from cup and discard, and allow the spring-loaded cover to shut tightly. Start engine by the usual method.

FIRE WARNING

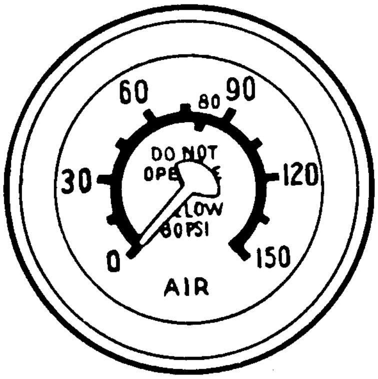
Starting fluid used in capsules is inflammable, toxic, and possesses anesthetic properties. Starting capsules should be stored in accordance with local fire regulations. Keep capsules away from open fire. NO SMOKING while using starting fluid capsules to start engine.

DURING OPERATION

Warm-Up

After a cold engine has started, increase speed to a fast idle for warm-up period, using "FAST IDLE" switch (item 8, page 4) on control panel. To provide fast idle operation, apply parking brake and place switch in "FAST IDLE" position. During engine warm-up and during engine operation, observe the gauge and tell-tale panel at frequent intervals. The gauges and tell-tale lights indicate normal and abnormal operation of the engine. The margin of safety in the gauges and tell-tales is enough to warn the operator of trouble before any serious damage occurs.

Air Pressure

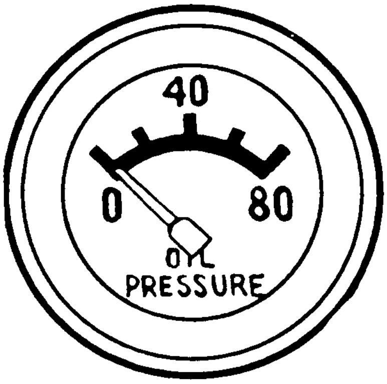


The air pressure on these vehicles is very important. Besides the brake and air suspension system, other systems of the vehicle depend upon air pressure for their operation.

During warm-up, the "LOW AIR" tell-tale will light and buzzer will sound until air pressure is built up to 60-65 psi. Do not move coach until 100 psi air pressure is available to release the parking brake. Apply parking brake and use "FAST IDLE" switch to run engine at fast idle while building up air pressure.

Coach should not be operated with air pressure below 80 psi. If during operation the tell-tale "LOW AIR" lights and buzzer sounds, indicating low air pressure, **stop the coach as quickly as possible and determine and correct cause of low pressure before proceeding.**

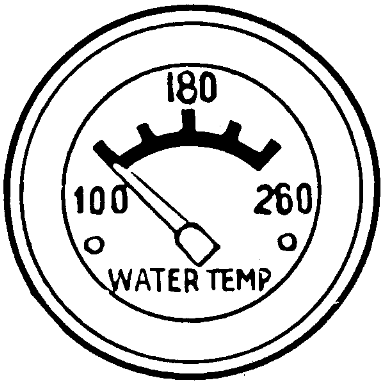
Engine Oil Pressure



Engine oil pressure gauge (24, page 2) is mounted on instrument panel in front of operator. Normal readings with engine hot are: Idling—9 to 18 pounds; governed full-load speed—35 to 70 pounds. Engine must not be operated when oil pressure falls below 28 pounds at governed speed under full load.

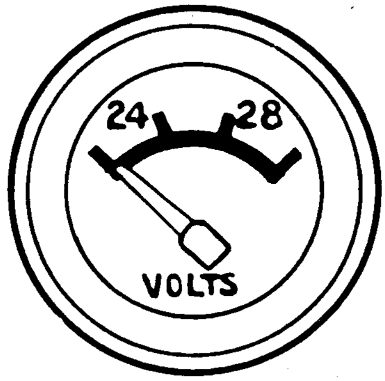
If oil pressure falls below 4 pounds, the "LOW OIL" tell-tale will flash and alarm buzzer will sound. Stop coach immediately and correct cause of low oil pressure before proceeding.

Engine Temperature



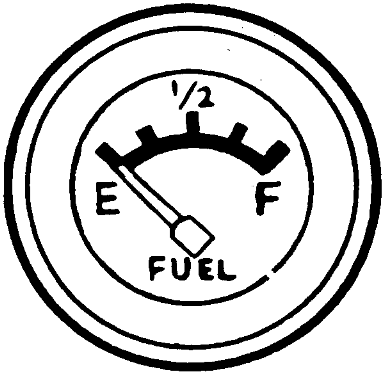
Engine temperature gauge (22, page 2) marked "WATER TEMP" is located on instrument panel in front of operator. Efficient operating temperature range is 180°F. to 195°F. Avoid moving coach, if conditions permit, until temperature is up to 140°F. If engine overheats (215°F.), the "WATER" tell-tale will flash and buzzer will sound. Stop coach immediately and correct cause of overheating before proceeding.

Battery



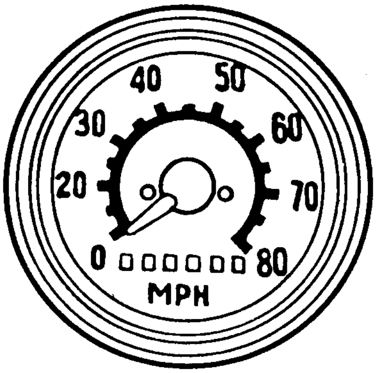
The voltmeter type charge indicator (6, page 2) marked "VOLTS," located on instrument panel, is calibrated in volts and is divided into three segments. During operation, the indicator hand should remain in the white segment to indicate normal battery condition. If indicator hand remains in left-hand red segment, an undercharge condition exists. If hand goes over to the right-hand segment, an over-charge condition exists. When indicator shows either an undercharge or overcharge condition, report condition at once.

Fuel



Fuel gauge (14, page 2) is located in center of instrument panel and registers amount of fuel in tank whenever "ENG" switch is in "ENG" position. An additional fuel gauge at the fuel tank is also available as special equipment.

Speed



A speedometer (21, page 2) is mounted in the right-hand section of the instrument panel in front of the driver and registers the "miles-per-hour" the vehicle travels. Included is an odometer which registers accumulative miles traveled.

ENGINE ALARM SYSTEM

The engine is equipped with an alarm system to signal low oil pressure and high engine temperature. "LOW OIL" and "WATER" tell-tales are located on instrument panel. In addition, an alarm buzzer sounds when either condition occurs. Some coaches have an automatic shut-off system, operating through a safety control relay, interconnected with the alarm system.

On some coaches, the safety control relay action can be over-ruled by pressing "ENGINE STOP OVER-RULE" switch (1, page 2), permitting continued movement of the coach to safety.

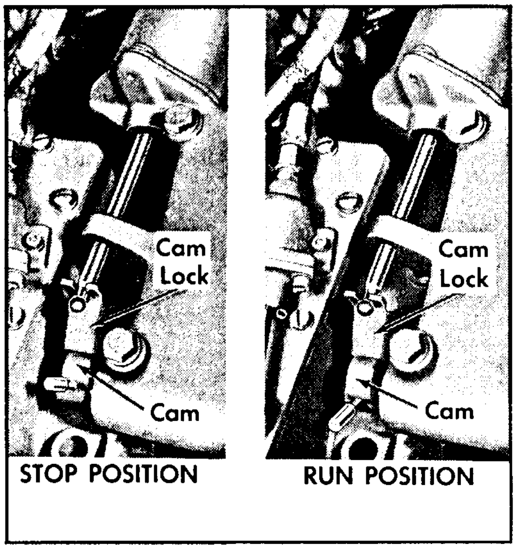
IMPORTANT

Under no condition should the engine be run after the tell-tale flashes and buzzer sounds. The operator should immediately park the coach in a safe location. Do not restart engine until the abnormal condition is corrected. Refer to "Emergency Conditions" on page 35.

STOPPING ENGINE

1. Apply parking brake and place transmission shift lever in neutral.
2. Idle engine for about 30 seconds, then place the "ENG" control switch in "STOP" position. This will activate the governor shut-off mechanism and stop the engine.

ENGINE EMERGENCY STOP



Emergency Stop Solenoid

The "EMERG. STOP" switch (25, page 2) on instrument panel in front of driver is used only as an emergency measure in the event engine fails to stop when "ENG" control switch is placed in "STOP" position. The "EMERG. STOP." switch is a "momentary-on" type switch. Guard over switch must be lifted up to expose toggle switch. When switch is pushed to "ON", a solenoid releases cam on air choke valve, permitting valve to close, thus shutting off air supply to engine.

Important

When "EMERG. STOP" switch has been used to stop engine, the choke valve must be manually reset at the engine (see illustration). Rotate cam until shoulder of cam engages cam lock.

TRANSMISSION LOW OIL PRESSURE

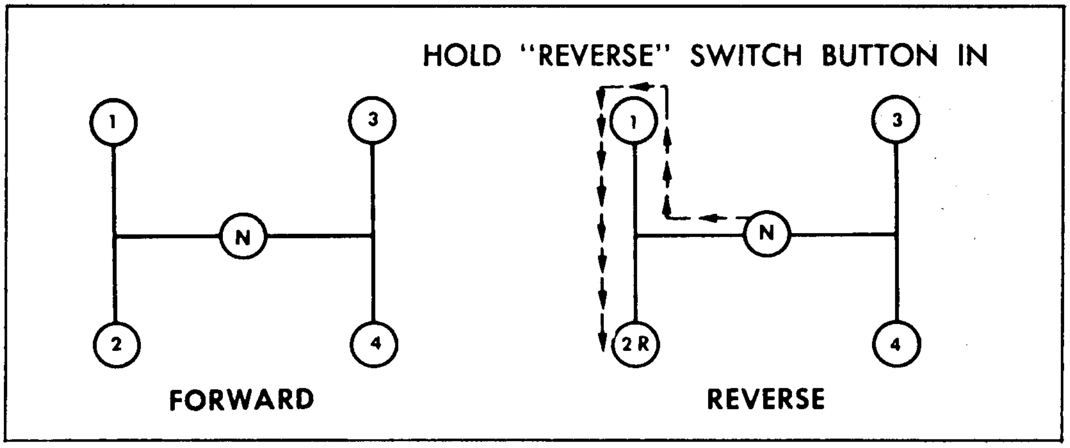
"TRANS. OIL" tell-tale (11, page 2) located in instrument panel is used to indicate transmission low oil pressure. Tell-tale light may come on at engine idle. Increase engine rpm—if light remains on, determine cause and correct before proceeding. If tell-tale comes on during normal operation, stop coach; low oil level in transmission or a faulty oil pump is indicated. Determine cause and correct before proceeding.

USE OF TRANSMISSION

Standard mechanical transmission has four forward speeds and one reverse. Shift is made into the various forward speeds with a conventional shift lever. Until oil is warm in the wet type clutch, difficulty may be experienced in shifting fast. After oil is at normal operating temperature, fast shifting is necessary for smooth engagement.

On late models, the transmission is equipped with two neutral safety switches which prevent starter engagement if shift rails are not in neutral position.

Reverse gear is obtained by using an electric solenoid in conjunction with the shift lever. Solenoid is controlled by a momentary-on type "REVERSE" switch (26, page 2) on instrument panel.



Transmission Shift Chart

Upshifting

Double-clutching method is recommended when shifting gears. Always start vehicle moving in 1st gear and progressively shift to 2nd, 3rd, and 4th; do not skip gears. Remain in each gear until approximate engine governed speed is reached before shifting into the next higher gear.

Downshifting

Always shift into next lower gear before the engine starts to lug. Use the double-clutching method of shifting. Make use of lower gears going up and down grades, when on *ice*, in *snow*, or in *mud*.

USE OF TRANSMISSION (Cont.)

Downshifting (Cont.)

Use the same gear to go down a grade as would be used to go up the same grade. Bear in mind that the Diesel engine is an effective brake in checking vehicle speed when going down a grade. Braking effect of the engine increases with its speed; however, *the maximum engine speed must not exceed its governed speed.*

Under normal driving conditions it is not necessary to downshift through all gears (that is 4, 3, 2, 1). Standard downshift from fourth gear to first gear should be made after coach is brought to a complete stop. Do not try to downshift from fourth to first while coach is still moving.

Reversing

The engine control switch must be in "ENG" position before "REV" switch will be operative.

With coach completely stopped, depress clutch pedal (14, page 1) and move transmission shift lever from neutral into **first gear position.**

While holding reverse switch in "REV" position, move shift lever to reverse position (normally 2nd position). Release reverse switch and slowly release clutch and accelerate as necessary.

To shift out of reverse, the coach must be completely stopped. With clutch pedal depressed, move shift lever from "reverse" position to "first" position then to "neutral" position. This sequence must be followed to assure that transmission is in NEUTRAL. Starter cannot be activated on late models unless transmission is in neutral (except by use of overrule switch – IN EMERGENCY ONLY). It is not necessary to use the reverse switch when shifting out of reverse.

Important

If unable to shift into reverse gear as instructed above, refer to page 35 for instructions under "Manual Reverse Shifting Procedure."

CAUTION

Safety demands that the gearshift lever be placed in Neutral position before driver leaves his seat. Do not leave coach parked with transmission in any driving gear position. Always place gearshift lever in Neutral and set parking brake effectively before stopping engine.

USE OF SERVICE BRAKES

Service brakes on these coaches are air-operated and are applied by pressing brake treadle (13, page 1), located to the left of accelerator pedal. Varying degrees of brake application are obtained by varying the foot effort applied to the treadle.

Bearing in mind that the best braking can be obtained by making the initial brake application gradually to extent of brake required. Application pressure should then be reduced gradually as speed is reduced so that at end of stop only a slight pressure remains in the brake chambers.

Do Not "Fan" The Brake Treadle

This practice causes poor brake performance, wastes air pressure, and causes excessive wear on brake operating units and brake lining. "Fanning" does not increase brake line pressure, but decreases both reservoir and line pressure.

When brake treadle is depressed, stop light switch functions to light stop lights. The tell-tale marked "STOP LAMP" (12, page 2) on instrument panel will light, indicating stop lights are functioning. Failure of tell-tale to illuminate when brakes are applied indicates malfunction in the stop light circuit.

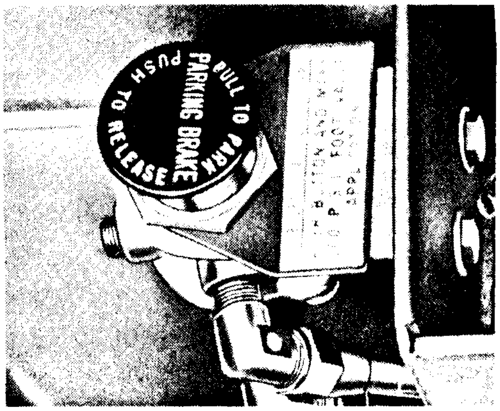
Air Pressure Is Important

Air pressure must be at least 80 pounds before air brakes can develop their full effectiveness. The operator should observe the air pressure gauge frequently. If "LOW AIR" tell-tale lights and buzzer sounds during operation, coach should be stopped and cause of air loss determined. **Manual pressure on the treadle will not operate the brakes without air pressure.**

PARKING AND EMERGENCY BRAKE

The air-operated parking and emergency brake control valve is located at the right of driver's seat. Operation of the system is as follows:

Normal Operation — Control valve knob must be pushed in, and a 100 psi service brake application made before attempting to move coach. Service brakes then operate in the normal manner.



Parking Brake Valve

PARKING AND EMERGENCY BRAKE (Cont.)

To Park – To apply parking brakes, pull control valve all the way up. This applies brakes at rear wheels, and brakes will remain applied until released. Parking brake should always be applied whenever coach is parked. Parking brake should not be used for normal braking; however, it can be used for stopping coach in an emergency.

To Release Parking Brake – Push control valve knob all the way down, then make a 100 psi service brake application before attempting to move coach. This is usually necessary to release the parking brakes. Parking brakes will not release unless the control valve knob is first pushed all the way down.

Emergency Operation – If normal application of the service brakes fails to stop the vehicle, emergency brake application should be made by pulling the control valve knob all the way up. This system is designed for emergency use only, producing a severe, sudden stop, and should be used ONLY under emergency conditions.

Loss of Air Pressure–A warning tell-tale, "LOW AIR"–(7, page 2), will light and a buzzer will sound when air pressure in system drops below 60 pounds. The vehicle should be stopped and the cause of pressure loss determined and corrected before proceeding. However, if warning devices are ignored and parking brake reservoir pressure drops below 40 pounds, making operation of the vehicle unsafe, the emergency brakes will apply automatically.

OPERATION OF LIGHTS

All internal and external lights, with the exception of engine and baggage compartment lamps, stop lamps, and lavatory lamps are controlled by various switches located in operator's compartment.

Operation of lights and light switches is explained under applicable headings following:

IMPORTANT

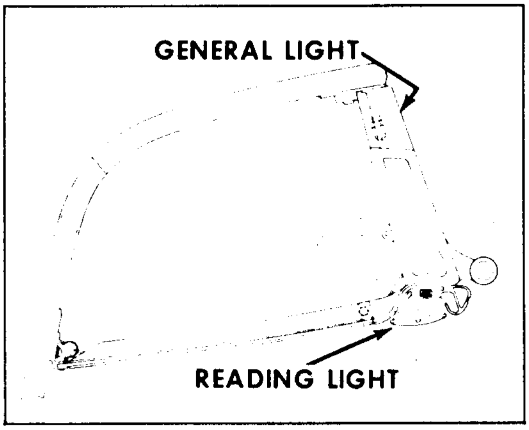
If in case of emergency it becomes necessary to park coach on street or highway, day or night, emergency flasher lights must be turned on until flags, flare pots, or fusees are displayed. Refer to page 37 for use of "EMERGENCY FLASHING" switch.

Headlamps

Headlamps are "on" on low beam at half intensity (12 volts) anytime engine is running. Full intensity (24 volts) headlamp circuit is energized by placing toggle switch on control panel to left of driver in the "HEAD-TAIL-MARK" position. High or low beams can be selected by a foot-operated dimmer switch (15, page 1) on the floor.

When headlamp high beam is selected, the tell-tale "HI-BEAM" (10, page 2) on instrument panel is illuminated. The lower beam is generally used on lighted streets or when approaching on-coming traffic.

Reading Lights



A two-position switch (18, page 2) marked "READ," located on instrument panel in front of operator, controls coach passenger reading lights circuit. Reading lamps are mounted under package racks and are prefocused to provide maximum illumination for each passenger. When "READ" switch is in "READ" position, reading lights of lamp assemblies are energized. Individual switches on the lamps can be controlled by each passenger.

General Lights

A two-position switch (19, page 2) marked "GEN'L," located on the instrument panel in front of the driver controls lights at the top of the package racks (12 lights on 4108 Models and 14 lights on 4905 Models). These lamps are to be used for general interior lighting at night.

Driver's Lamp

Refer to "FOR THE OPERATOR" (page 6) for location and operation of driver's lamp.

OPERATION OF LIGHTS (Cont.)

Lavatory Lights

Lavatory mirror light is illuminated when engine switch (2, page 2), located on instrument panel in front of driver is in "ENG" position. "OCCUPIED" sign becomes illuminated when lavatory door is locked from the inside.

Entrance Door Step Light and "WATCH STEP" Sign

"WATCH STEP" sign and entrance door light switch circuits are energized by the "ENG" switch (2, page 2), located on instrument panel in front of operator. "WATCH STEP" sign, located in front trim panel over center step, is illuminated automatically by engine switch when in "ENG" position. When entrance door is opened, step lamp is illuminated and circuit is completed to flash "WATCH STEP" sign off and on as an extra warning to passengers leaving coach.

Night Lamps, Marker Lights and Instrument Panel Lamps

When light switch (16, page 2) is placed in either "on" position, front and rear coach exterior marker lights, gauge lamps on instrument panel gauges, night lamps on front and rear passenger seats, and night lamps on front and rear package racks are illuminated.

Destination Sign Lights

Destination sign over windshield and special equipment side destination sign, located just to rear of entrance door, are illuminated when sign switch (17, page 2) is placed in "SIGN" position.

Back-up Lights

Two back-up lights are located on the engine compartment door (item 16, page 30). These lights are automatically illuminated when transmission is shifted to reverse gear position.

OPERATION OF LIGHTS (Cont.)

Directional Signal Lights

The directional signal switch handle is located at left side of steering column just under the steering wheel (3, page 1). With switch lever up (forward), the front right turn signal light and the rear right signal light flash on and off for a right turn. With lever down (rearward), similar left lights flash to indicate left turn. With switch lever either down or up, the corresponding tell-tale (5 or 15, page 2) flashes, indicating that lights are operating. After making turn, switch handle returns to neutral position.

Stop Lights

Right and left stop lights illuminate whenever brakes are applied. The tell-tale "STOP LAMP" (12, page 2) illuminates, signalling that lights are operating when brakes are applied. Stop lights also operate when DD-3 parking brake is applied and engine switch is in "ENG" position.

Emergency Flashing Signal Lights

Refer to "EMERGENCY CONDITIONS" on page 37.

Engine Compartment Lights

Engine compartment lights are controlled by a two-position switch marked "COMPT. LAMPS" on engine compartment control panel (page 38).

Baggage Compartment Lights

Baggage compartment lights are controlled by automatic switches and illuminate when baggage compartment doors are opened.

Refrigerant Receiver Tank Light

Light for viewing level of fluid in receiver tank is illuminated by automatic switch when right or left front baggage compartment door is opened.

License Plate Light and Tail Lamps

Tail lamps and license plate lights are controlled by light switch (16, page 2), on instrument panel in front of operator. Lights are illuminated when switch is placed in either "on" position.

HEATING AND AIR CONDITIONING

Three "VENTILATION CONTROLS" on panel at left of operator (page 4) are used to control heating and air conditioning systems.

Heating System Operation

Operation of heating system is completely automatic whenever coach engine is running and switch marked "HEAT - AIR COND." (9, page 4) is placed in "HEAT" position. Control rheostat marked "TEMP. RANGE" (10, page 4) is used for selecting desired temperature within a 12 degree range (68° to 80°F).

Note

Heating system also supplies heat to the windshield defroster heater core. Refer to pages 7 and 8 for operation of defroster fan and temperature control valve.

Air Conditioning System Operation

NOTE: Make certain defroster heater control valve is fully closed before operating air conditioning system.

Air conditioning system operates automatically when the coach engine is running and the switch marked "HEAT - AIR COND." (9, page 4) on control panel at left of operator is placed in "AIR COND." position.

NOTE: On 4905 models, air conditioning will not become engaged until engine is at idle, air pressure at least 65 pounds, and engine oil pressure is less than 15 pounds. **Caution: Do not, under any conditions, engage air conditioning unless engine is at idle and vehicle speed is less than 25 miles per hour.**

With system operating, the blower motors will operate at high speed. If air conditioning system should fail to operate, a tell-tale marked "A/C STOP" will light on gauge and tell-tale panel in front of operator. If tell-tale comes on during operation, turn "HEAT - AIR COND." switch to "OFF" position. Report condition to maintenance personnel as soon as possible.

When operating system while vehicle is parked, operate coach engine at fast idle speed. Apply parking brake and place switch marked "FAST IDLE" (8, page 4) on driver's control panel in "FAST IDLE" position.

NOTE: Parking brake must be applied before fast idle switch will become operative.

HEATING AND AIR CONDITIONING (Cont.)

Important

Before moving coach, return "FAST IDLE" switch to "OFF" position and release parking brake.

During operation of air conditioning system, keep windows closed and do not leave door open for excessive periods.

The air conditioning refrigerant level can be checked only when the system is in operation. Access to refrigerant tank sight level glass is gained from within left front baggage compartment. Light in receiver tank will illuminate automatically when baggage compartment door is opened.

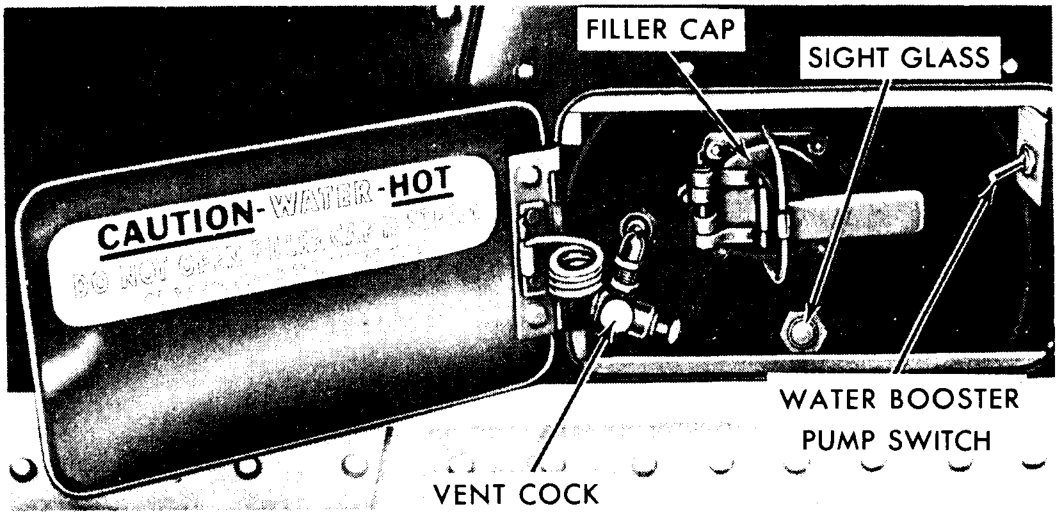
Operator's Heat and Cooling Control

PD4108—Warm or cool air is supplied to driver from longitudinal side duct through adjustable deflector and by opening air outlet door in bottom of duct. Heat can also be directed from defroster heater through adjustable outlet (2, page 1) and by opening damper at right of accelerator pedal (see page 7).

PD4905—Warm or cool air is supplied to driver from front heater evaporator through adjustable outlet (2, page 1). Warm or cool air can also be supplied to driver by opening damper at right of accelerator pedal (see page 7). When air conditioning is on, water valve must be closed on front heater.

ENGINE COOLING SYSTEM

In addition to controlling the operating temperature of the coach engine, the engine cooling system provides heated water for circulation through the coach heating system.



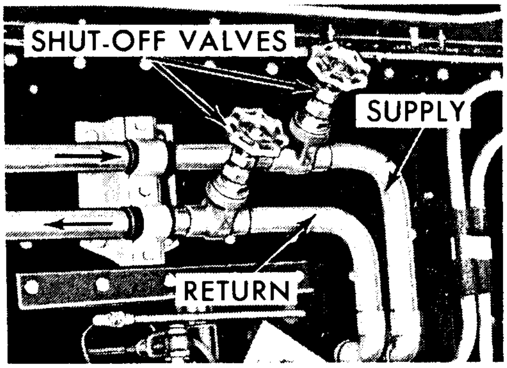
Surge Tank Filler and Vent Cock

Engine cooling system filler cap and vent cock are accessible through door (13 page 30) at left rear corner of coach.

Vent cock is a spring-loaded button type valve, provided as a safety feature to release steam or pressure from the system before the filler cap is opened. Always press the button before opening the filler cap. A sight glass is also provided to indicate fluid level without opening filler cap.

As a further precaution, a safety catch on filler cap prevents completely opening the filler cap in one operation.

To open filler cap, pull handle until cap is opened to limit of safety catch. After any existing steam or pressure has escaped, release safety catch and completely open cap. When filler cap is closed, handle should be pressed down to secure safety catch on cap.



Heating System Shut-Off Valve

Two gate valves in heater supply line and heater return line located at engine compartment bulkhead, can be closed to separate the heating system from the engine cooling system. This feature is provided mainly for maintenance purposes; however, driver should make sure valves are fully open in the event system needs to be drained in an emergency. Shut-off valves should be completely closed or fully open—never part way.

Replenishing System

1. Always press vent cock valve button before opening filler cap to check level of water. If water is not level with bottom of filler opening, additional water is required.

2. Open radiator filler cap. With engine running, add water until it is level with bottom of filler opening. Close filler cap and latch securely.

ENGINE COOLING SYSTEM (Cont.)

CAUTION

If engine becomes overheated, do not add cold water immediately. Wait until boiling has stopped and engine cooled, then add water slowly with engine running.

Draining Cooling System

If only the engine cooling system is to be drained, close the heater line gate valves. If necessary to completely drain the system, such as to prevent freezing, the heating system must also be drained. Drain points are listed on page 24.

NOTE: If it is necessary to drain cooling system to prevent freezing, the lavatory water tanks should also be drained as directed on page 28.

ENGINE DRAIN POINTS

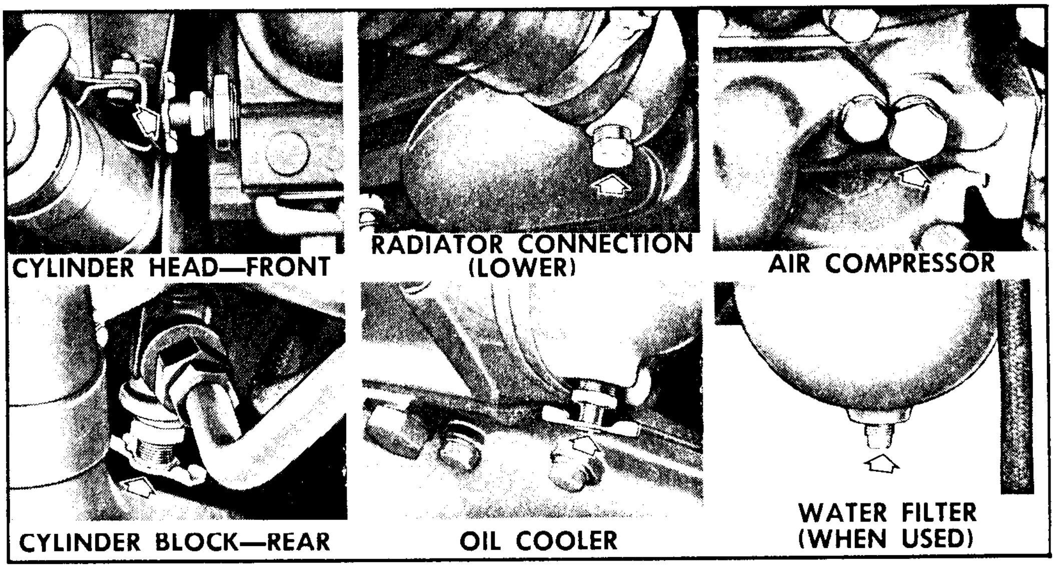
Radiator—Remove drain plug from radiator outlet connection at bottom of radiator.

Cylinder Block—Open drain cock at front of cylinder block and drain cock in air compressor water line fitting at cylinder block.

Oil Cooler—Open drain cock at bottom of oil cooler housing.

Air Compressor—Remove drain plug from cylinder block.

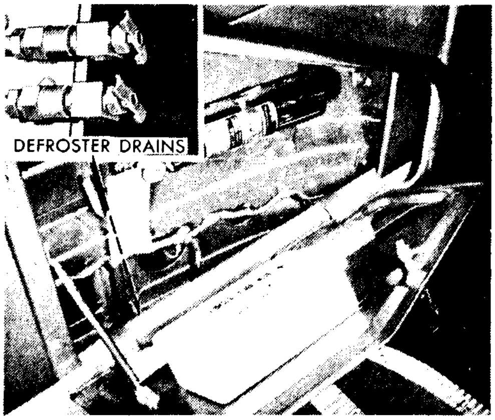
Water Filter (When Used)—Remove drain plug from bottom of water filter housing.



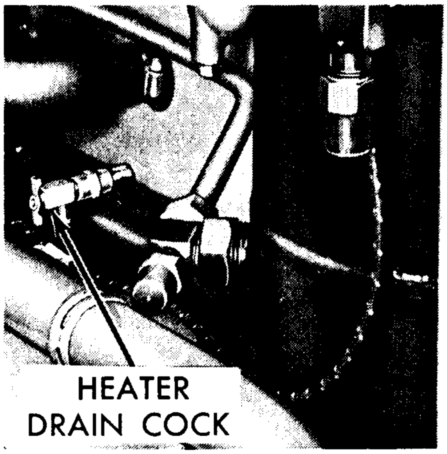
Cooling System Drain Points

ENGINE COOLING SYSTEM (Cont.)

Draining Cooling System (Cont.)



Defroster Drain Access



Heater Core Drain Cock

HEATING SYSTEM DRAIN POINTS

In order to completely drain the heating system it is necessary to drain both the defroster heater core and the main heater core.

Defroster Heater Core—Open dash compartment door for access to defroster heater core drains. Open two wing-type drain cocks located at bottom of dash compartment as shown in illustration at left.

Main Heater Core—The drain cock for the main heater core is located in the air conditioning condenser compartment (item 7, page 30). Access to this compartment is through the left front baggage compartment. Open baggage compartment door and remove access panel from forward bulkhead. Reach through panel opening and open drain cock on rear wall of condenser compartment.

Filling Empty System

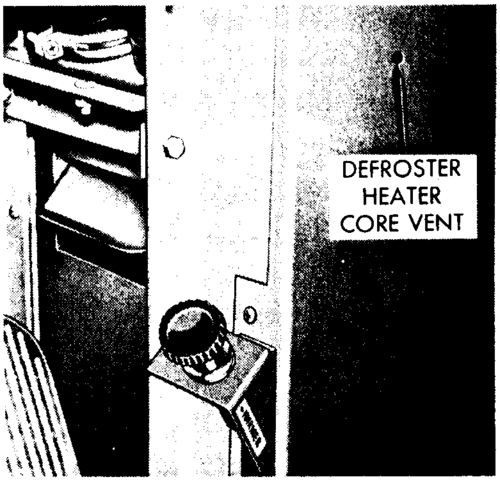
1. Make sure all drain cocks are closed and that all drain plugs are installed. If heater line gate valves were closed, open valves. Also open surge tank vent line shut-off located on thermostat housing at front of engine.
2. Make sure defroster heater control valve is in full-open position (knob pulled up).
3. Add coolant until level with bottom of filler opening in surge tank.
4. Start and run engine at fast idle until normal operating temperature is reached. Leave engine at normal idle.
5. Using a screwdriver through hole in defroster heater closure panel, open vent screw at upper left corner of defroster heater core. Close vent screw when all air is expelled. See illustration, page 25.

ENGINE COOLING SYSTEM (Cont.)

Filling Empty System (Cont.)

6. At surge tank opening (page 21), place "WATER BOOSTER PUMP" switch in "PUMP" position for a minute or more which will speed up circulation through heater lines to quickly vent or purge remaining air from system.

7. Add additional coolant until level with bottom of filler opening. Close filler cap and engine to surge tank vent valve.



Water Filter

Water filter, when used, is mounted on a bracket on left hand hanger in engine compartment. Purpose of filter is to filter and condition water in the engine cooling system. Instructions for servicing the filter element are explained on side of filter.

Important

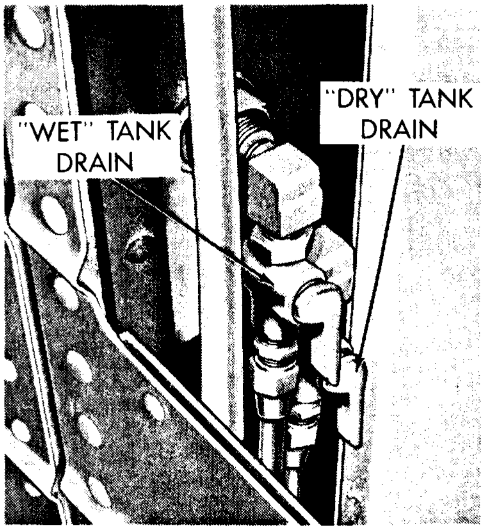
When filter is used in cooling system containing permanent type antifreeze (ethylene glycol base), filter element bearing the letters P.A.F. must be used. This element is designed for use with permanent type antifreeze.

AIR TANK DRAINS

The main air tank has two drain valves accessible through the fuel tank filler door. One valve drains the "wet" tank, the other the "dry" tank.

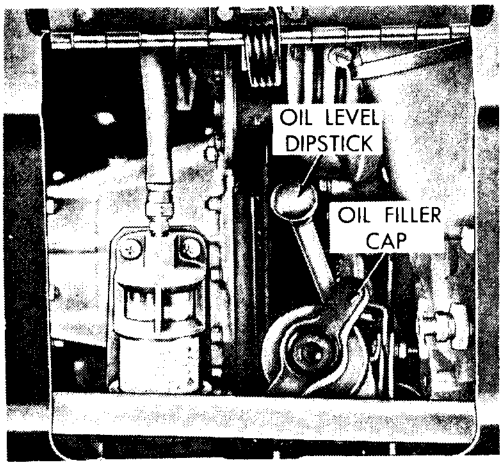
The suspension air tank is in the compartment at left front corner of coach. Drain valve is in bottom of tank.

The parking brake air tank is under the coach above the rear axle. Drain valve is bottom of tank.



ENGINE CRANKCASE OIL

Engine oil dipstick and oil filler are accessible through access door (14, page 30). A measure with a long pouring spout must be used to add oil through access door; otherwise, engine compartment door (16, page 30) must be opened. Always check crankcase oil level with engine at normal operating temperature. Leave engine stopped for approximately three minutes before checking oil level.

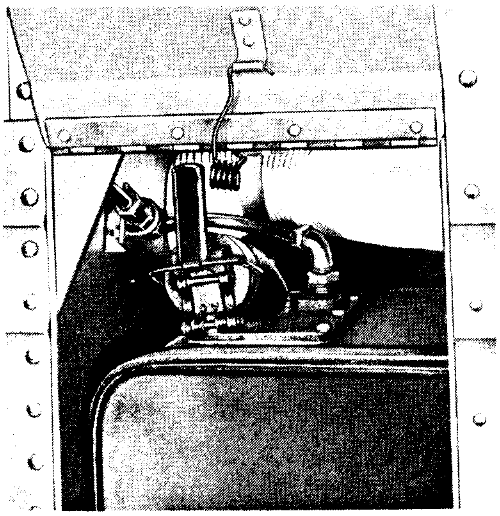


Oil Dipstick & Filler

To open access door, pull lower edge of door outward and up.

Withdraw dipstick and wipe with **clean** rag. Insert dipstick, then withdraw and note oil level. If down to "LOW" mark, sufficient oil must be added to bring level up to "FULL" mark. If necessary, add crankcase oil of proper grade and viscosity.

ENGINE FUEL



Fuel Tank Filler

The engine fuel tank filler is accessible through access door (23, page 30).

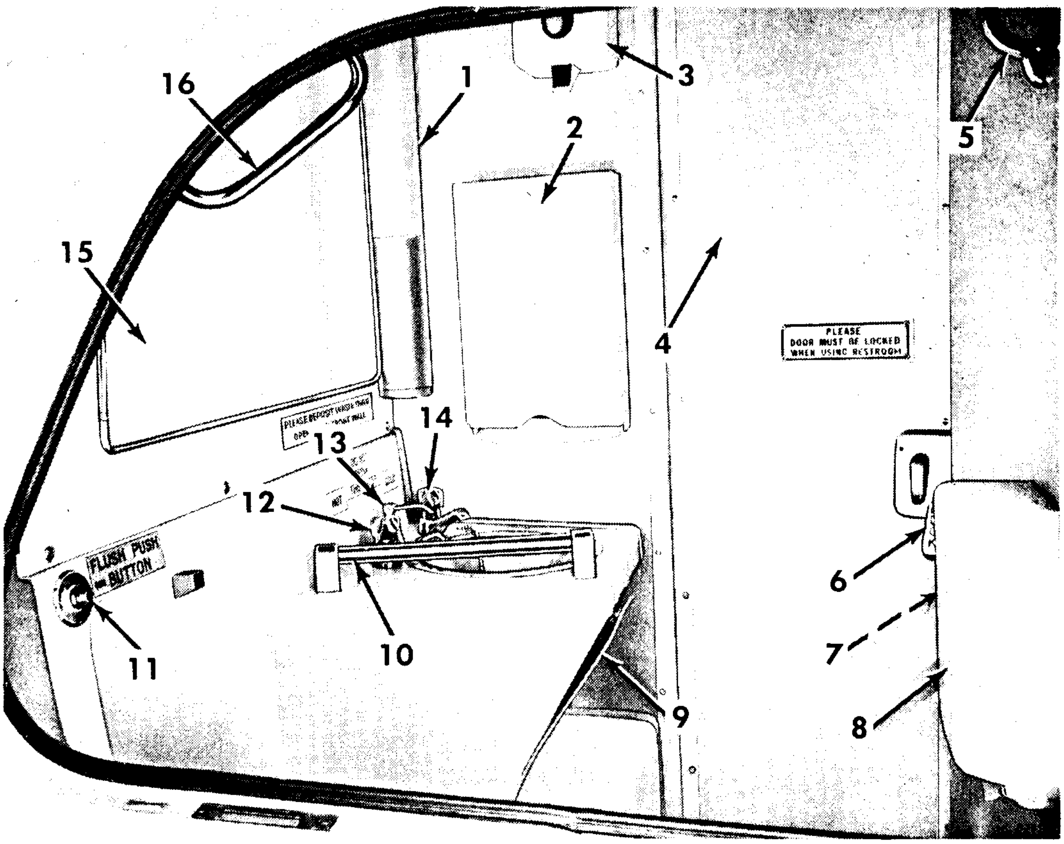
Fuel tank is equipped with a "Ventalarm" system. The "Ventalarm" whistle blows while tank is being filled, and stops blowing when tank is filled.

Use only Diesel fuel of the correct grade. After filling, close filler cap securely and close access door.

LAVATORY

Lavatory and toilet facilities are provided for passenger comfort and convenience as special equipment. Lavatory is located at right rear corner of coach. Lavatory compartment is equipped with a wash basin, flush chemical toilet, liquid soap dispenser, mirror, waste paper container, toilet tissue dispenser, paper towel dispenser, and a sanitary napkin dispenser.

Closing and locking door from inside illuminates "REST ROOM-OCCUPIED" sign on outside of door. Emergency buzzer switch is located on compartment wall with adequately marked instruction plate. Supply tank, located behind rear wall over wash basin, supplies water to wash basin through faucets by gravity feed with hot or cold water. Waste water empties into the chemical toilet waste tank.



1–Lamp
2–Towel Dispenser
3–Sanitary Napkin Dispenser
4–Compartment Door
5–Assist Handle
6–Door Lock
7–Waste Container
8–Toilet Tissue Dispenser
9–Service Access Door
10–Hand Rail
11–Flush Button
12–Hot Water Faucet
13–Soap Dispenser
14–Cold Water Faucet
15–Mirror
16–Assist Handle

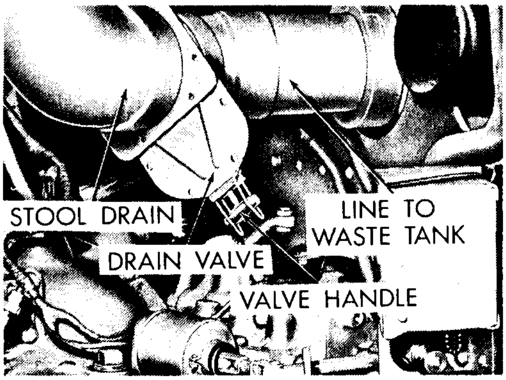
LAVATORY (Cont.)

Draining Lavatory Tanks

In the event of engine or heating system failure in freezing weather, tanks must be drained to prevent damage from freezing. Valves necessary to drain tanks are located beneath lavatory compartment and are accessible from outside of coach.

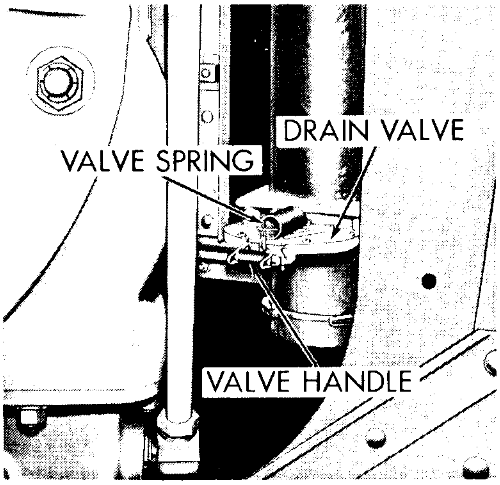
> **IMPORTANT: Servicing lavatory tanks must normally be accomplished where proper facilities are available. Draining instructions included in this book are for use only in case of an emergency requiring draining of tanks.**

Toilet Waste Tank—Before draining the toilet holding and waste tanks if at all possible, position coach over a receptacle or sewer inlet or other facilities to comply with local health regulations. Pull open valve (above transmission) to drain toilet holding tank into waste tank. Leave valve open.



Toilet Tank Drain Valve

Pull open valve to drain waste tank. Valve lever is in compartment ahead of transmission and can be reached from under coach or through hole in rear bulkhead. This valve is spring-loaded and must be held in open position.



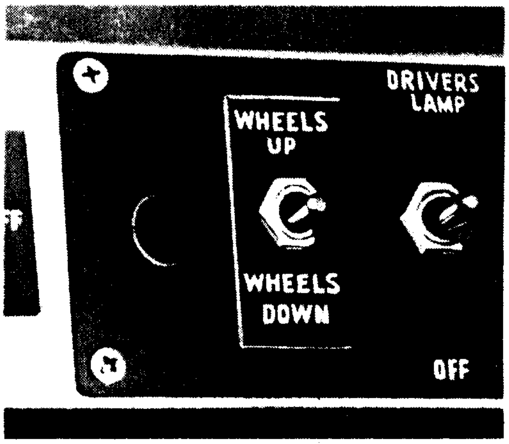
Waste Tank Drain Valve

Wash Basin Supply Tank — Wash basin must be drained through the waste tank. Open panel below wash basin to gain access to supply tank drain. Open drain valve, allowing supply tank to drain into waste tank through the supply tank overflow line. Leave valve open until system is to be refilled.

Important

After emergency drain, lavatory system must be serviced at the earliest opportunity when conditions will permit.

RETRACTABLE AXLE—4905 ONLY



A retractable rear axle may be used in addition to standard rear axle on some PD 4905 Models. This axle is located directly in front of the driving rear axle and is accessible for service by opening the rear baggage compartment doors. Operation of the axle is controlled with a switch located on the control panel to the left of driver (item 4, page 4). This is a two-position toggle switch, "WHEELS UP" and "WHEELS DOWN."

The axle is automatically raised and lowered by air pressure, depending on position driver places the control switch lever.

The axle brakes operate at the same time as the regular brakes, whether the axle is "UP" or "DOWN."

It is recommended the retractable axle be placed in the desired position ("UP" or "DOWN") before coach is put under way. It is not advisable to lower the axle with the coach moving, as this will result in excessive axle shock and tire wear.

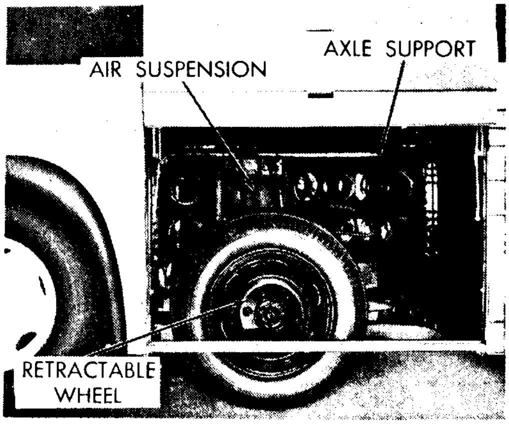
If it is necessary to remove a wheel from the retractable axle, this can only be done with the wheels in the "UP" position. A safety hook assembly is part of the installation and should be fastened before attempting to remove a wheel. The wheel must be taken out through the compartment door opening. It cannot be removed from underneath the coach.

DO NOT: — Attempt to operate coach with one wheel removed and axle lowered.

- **Support weight of wheel and tire on body rail when replacing wheel.**
- **Attempt to change wheel and tire without engaging safety hook.**

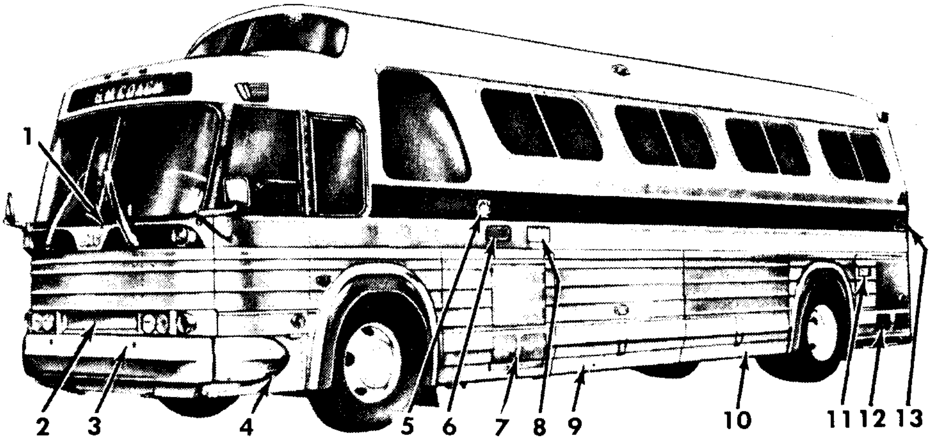
Important

With the axle in the "WHEELS UP" position, an electrical circuit is energized. If coach is to be parked for an extended period (over 24 hrs.), place switch in "WHEELS DOWN" position to avoid possibility of running down batteries.

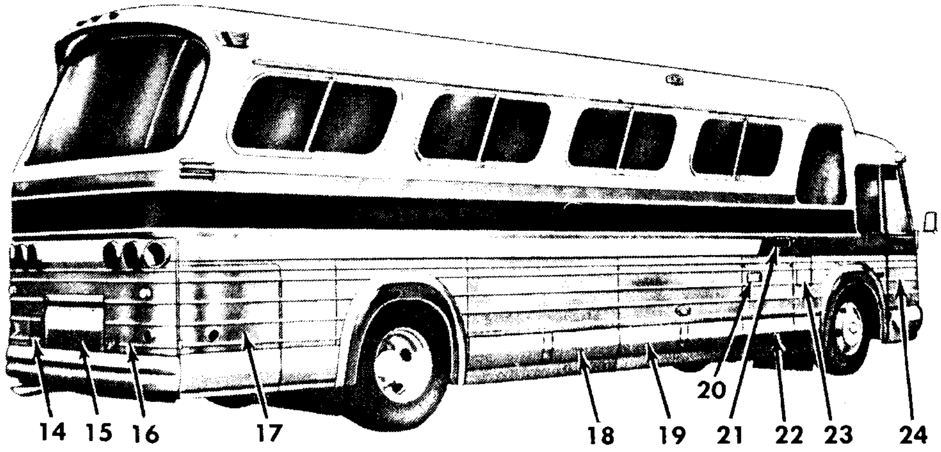


EXTERIOR COMPARTMENTS

Exterior views identify all compartment and access doors. Methods of opening and closing main doors are explained on following pages.



LEFT FRONT VIEW

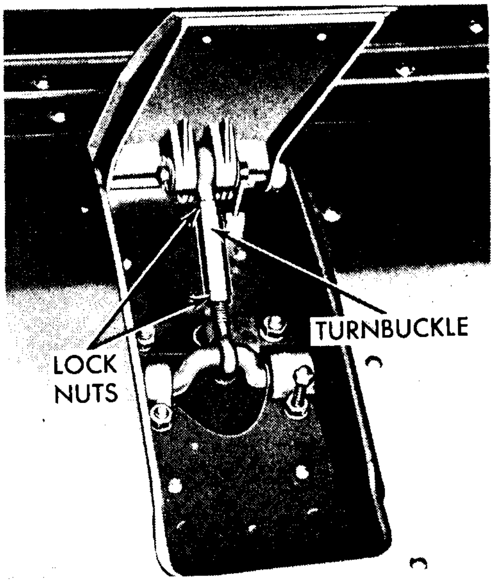


RIGHT REAR VIEW

Coach Exterior Compartments

1. **Entrance Door Release**
2. **Front License Plate Location**
3. **Spare Tire Compartment Door**
4. **W/S Washer Compartment Door (also tools on 4905)**
5. **In-Station Lighting Connection**
6. **Left Side Air Intake**
7. **A/C Condenser Compartment Door**
8. **In-Station Heating and A/C Connections**
9. **L.F. Baggage Compartment Door**
10. **L.R. Baggage Compartment Door**
11. **Battery Disconnect Access Door(4108 only)**
12. **Radiator Grille Door (also Battery Compartment on 4108 and A/C Compressor on 4905)**
13. **Radiator Filler Door**
14. **Engine Oil Dipstick Access Door**
15. **Rear License Plate Location**
16. **Engine Compartment Door**
17. **Transmission Compartment Door (also Lavatory Service when used)**
18. **R.R. Baggage Compartment Door**
19. **R.F. Baggage Compartment Door**
20. **Battery Disconnect Access Door (4905 only)**
21. **Right Side Air Intake**
22. **Heating Filter and Main Air Tank Door (also batteries on 4905 and tools on 4108)**
23. **Fuel Filler and Air Tank Drains Access Door**
24. **Entrance Door**

Baggage Compartments



Baggage Door Latch

Baggage Door Operation

Baggage compartment doors (9, 10, 18, and 19, page 30), which are pantograph-type, incorporate flush type latch locks as illustrated at right. Lock operating handle is flush mounted at center of door lower edge. Insert fingers under lower edge of operating handle; then pull outward and up to unlatch door.

Pull lower edge of compartment door out and up to open. Raise door to full-open position. Doors are held in open position by action of torsion bars and safety catch.

To close compartment door, it is first necessary to raise door slightly, then press safety catch away from control arm. Lower door as far as it will go; then lift up on lock operating handle to permit door to close at bottom. Push down on handle to lock.

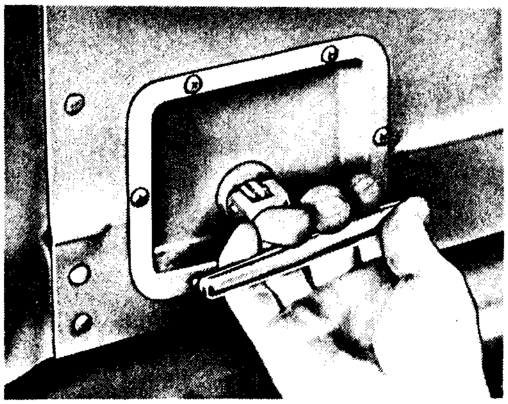
Lights, located in baggage compartments, are controlled by automatic switches and illuminate when compartment doors are opened.

Engine Compartment Door

Engine compartment door (16, page 30), which is hinged at the top, is secured by a lock handle located at lower section of door. To open door, turn lock release handle and raise door. Door is held in open position with one telescopic support prop having a hold-open retaining pin.

EXTERIOR COMPARTMENTS (Cont.)

Engine Compartment Door (Cont.)



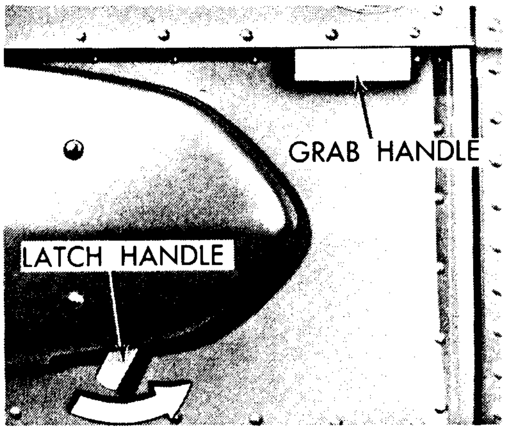
Engine Door Lock

To close door, first raise door slightly to allow removal of retaining pin from support rod; then lower door and turn lock handle to retain in closed position.

Caution

Do not drop engine compartment door to closed position as damage to lock may result.

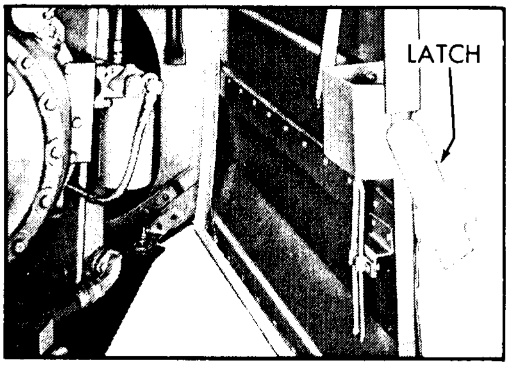
W/S Washer Compartment



W/S Washer Compartment Door

W/S washer compartment is located at left front corner of coach (4, page 30). Door latch handle extends below left bumperette. Pull latch handle to rear, then swing rear end of door out. To close door, hold latch handle to rear until door is closed, then release handle. Compartment is also used for storage of tools on 4905 models.

Transmission Compartment

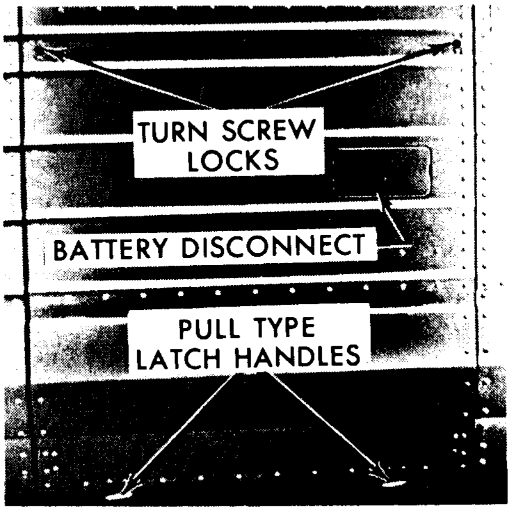


Transmission Compartment Door

Transmission compartment door (17, page 30) is hinged at forward edge and secured by a lever-type latch at rearward edge. To open, pull out latch lever. To close door, pull out latch lever, hold door in closed position, and push latch lever completely in. Lavatory (when used) also serviced at this location.

EXTERIOR COMPARTMENTS (Cont.)

Heating and Air Conditioning Compartment Doors



Main Air Tank Door (also Tools on 4108 or Batteries on 4905)

Air conditioning condenser compartment door (7, page 30) and heating filter and air tank door (22, page 30), which are pantograph-type, are retained in closed position with two pull-type latch handles located under doors, and two turn-screw locks at top of doors.

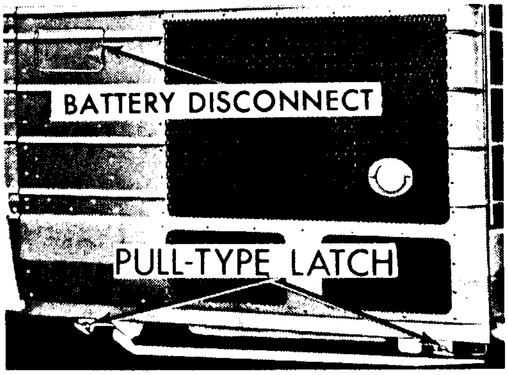
To open doors, pull latch handles out and down; rotate turn screws one-quarter turn to disengage locks. Pull door out and up into raised position. Doors are held in open position by a pull-type latch mounted on body at upper end of compartment.

To close door, pull latch out and down. Lower door and hold in closed position, rotate turn-screws one-quarter turn, then pull latch handles at bottom of door up and release in door catches.

Caution

Do not drop doors to closed position as damage to doors or body may result.

Radiator Grille and A/C Compressor Door



Radiator Grille and A/C Compartment Door (also Batteries on 4108)

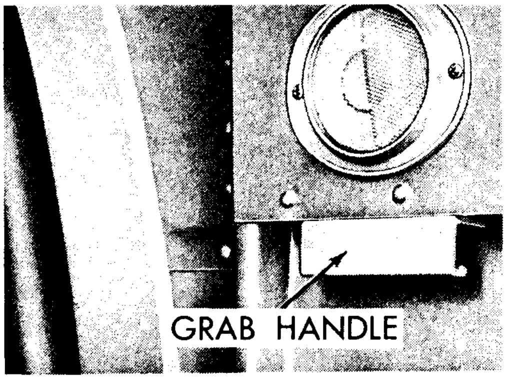
Radiator grille and air conditioning compressor door (12, page 30) is hinged at the top and retained in close position with two pull-type latch handles located under door.

To open door, pull latch handles outward and down to release. Raise door and retain in open position using support rod attached to door.

Radiator Grille and A/C Compressor Door (Cont.)

To close door, lift slightly to release support rod, secure support in door clip. Lower door and hold in closed position, pull latch handles out and release in door catches.

Entrance Door



Entrance Door Grab Handle Location

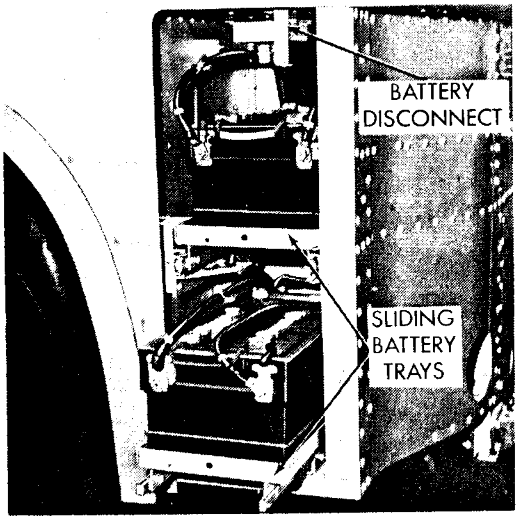
Entrance door (24, page 30) is manually operated by a control handle on windshield ledge to right of operator (6, page 1).

To open door, pull lever rearward and push toward door. To close door, pull lever toward driver and push forward to latch.

Door can be manually closed from outside after control lever is pulled from latched open position. From outside, push door until closed and latched.

To unlatch door from outside, push on release rod (1, page 30) which extends through body at front. After rod is pushed, door can be pulled open from outside using grab handle at bottom of door.

Battery Compartment



Battery Compartment (4108)

The battery compartment on 4108 Models is combined with the radiator compartment directly behind the left rear wheel.

Batteries are available by lifting hinged door. A prop to hold door open is part of the door. The batteries are set one above the other on sliding trays which roll out for easy service. Above the batteries is a disconnect switch which is accessible through a small door if only need is to disconnect batteries.

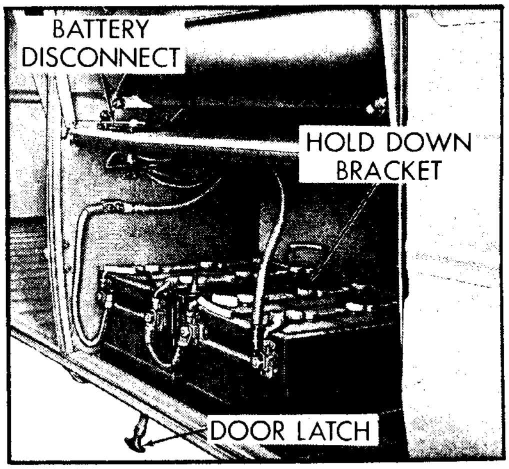
EXTERIOR COMPARTMENTS (Cont.)

Battery Compartment

The battery compartment on 4905 Models is combined with the main air tank compartment directly behind the right front wheel.

Batteries are immediately available by opening pantograph type exterior compartment door as directed on page 33.

Battery disconnect switch is located directly above batteries and is accessible through small door in compartment door.

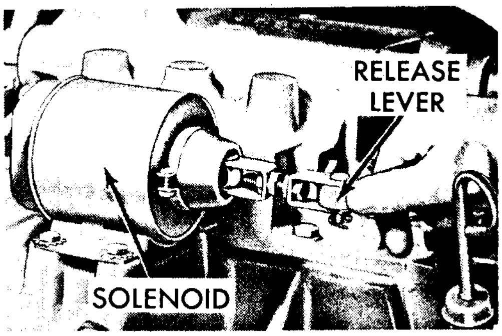


Battery Compartment (4905)

EMERGENCY CONDITIONS

Mechanical Transmission
Manual Reverse Shifting Procedure

In the event reverse gear position cannot be obtained due to reverse solenoid failure, reverse can be obtained manually by having an assistant hold the reverse solenoid lever inward while the driver proceeds through the normal reverse shift pattern, "N" to "1st" to "2R" (page 14).



Holding Solenoid Plunger In

1. Obtain the aid of an assistant and instruct him to press the reverse lever toward solenoid in the transmission compartment AFTER signal is given by the operator. Also instruct him to step to one side to safe area after engagement occurs.

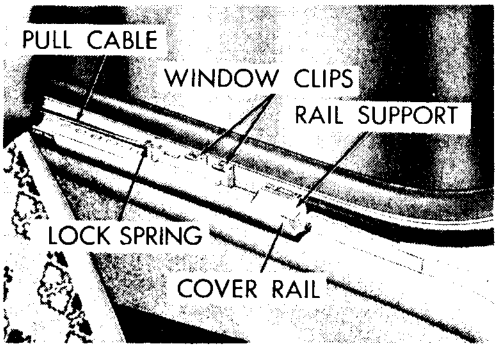
2. Place transmission shift lever in "1st" gear position. Sound horn to signal assistant at rear of coach to press on lever, then move gear shift lever to "2R" position. Reverse gear engagement should occur.

Check whereabouts of assistant before proceeding in reverse motion.

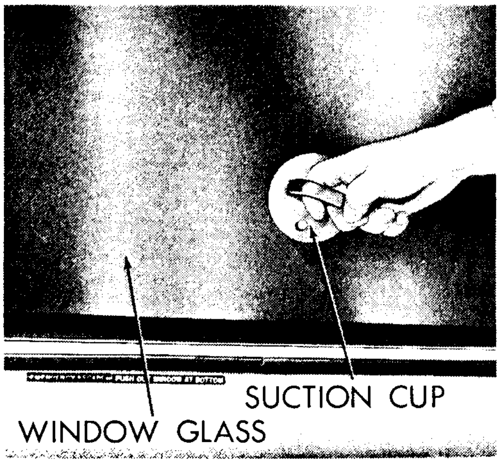
Side Window Emergency Escape

In emergency the entire side window sash can be opened from the inside for escape. Windows are hinged at top and can be opened by pushing out at the bottom. Coaches are equipped with passenger instruction decal reading "EMERGENCY ESCAPE–PULL DOWN RAIL–PULL CABLE – PUSH OUT WINDOW AT BOTTOM."

Emergency Decal



Escape Mechanism



Closing Window

NOTE

Whenever it is noted that a side window is open, window must be closed immediately. Close window by pulling window inward. DO NOT SLAM TO CLOSE.

An escape mechanism guard rail is hinged at the bottom and covers mechanism to prevent accidental release.

To open window, pull rail down and release latch by pulling release cable. When latch is released, push window out at bottom.

To close window, use suction cup and pull window closed. While holding window closed, release lock by lifting lock spring. Use suction cup at both front and rear of window and release lock springs separately. DO NOT SLAM WINDOW.

NOTE

Standard equipment on these coaches is solid glass windows. Some coaches have sliding sash windows as special equipment. Emergency escape mechanism is the same for both types.

EMERGENCY CONDITIONS (Cont.)

Emergency Flashing Signal System

All vehicles are equipped with a flashing signal system whereby all directional signal lights can be controlled to flash simultaneously in an emergency. System becomes operative when the "HAZARD WARN" switch (23, page 2) on instrument panel is placed in "FLASHER" position. Right and left directional signal tell-tale lamps flash when system is operating.

IMPORTANT: If right or left directional signal tell-tale fails to flash, it is an indication that one or more bulbs are burned out at front or rear of coach.

Circuit Breakers

All circuits in the electrical system are protected by circuit breakers.

Whenever a short exists in a circuit, action of the circuit breaker opens the circuit causing the protected system to cease functioning. After the circuit breaker element cools, the circuit breaker will again be closed. As long as the short exists, action of circuit breaker will continue to intermittently open and close the circuit until the switch controlling the defective circuit is turned off. When such a condition exists, the switch controlling the defective circuit should remain off until the cause of the short is located and corrected.

Battery Disconnect

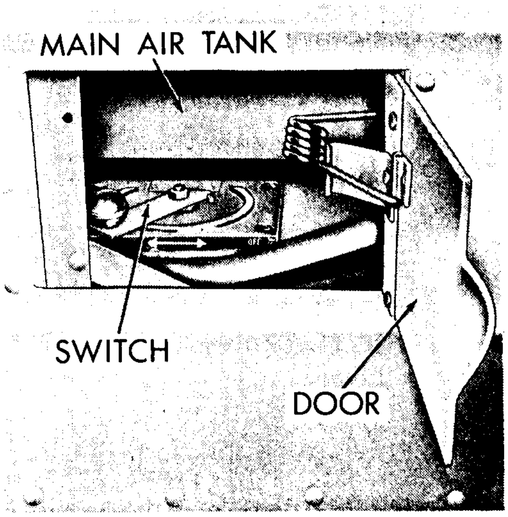
If necessary to disconnect batteries from electrical system, such as in the case of fire, move switch lever at top of battery compartment to "OFF" position.

Battery disconnect should also be used for charter or overnight parking.

On 4108 Models batteries are located at left rear of coach to rear of back wheel and a disconnect switch access door is located in the radiator compartment door.

On 4905 Models the batteries are located at right front of coach to rear of front wheel and a disconnect switch access door is located in the main air tank compartment door.

Refer to page 30 for location of compartments.



Battery Disconnect (4905 Shown)

EMERGENCY CONDITIONS (Cont.)

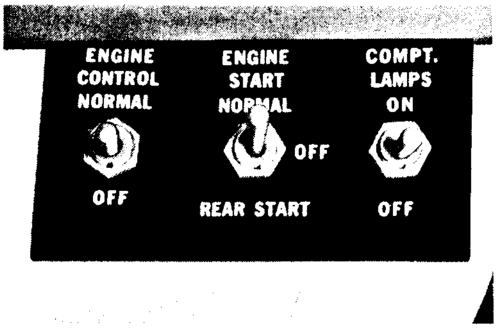
Operation of Engine at Rear of Vehicle

Switches for starting and stopping the engine at the rear are mounted on switch panel at upper left side of engine compartment. Open engine compartment door (16, page 30) as directed on page 31 for access to switch panel.

Starting Engine at Rear

IMPORTANT: Before attempting to start engine at rear of vehicle, place transmission shift lever in neutral and apply parking brake.

1. In operator’s compartment, place “ENG” switch in “ENG” position.
2. At engine compartment control panel, make sure “ENGINE CONTROL” switch lever is in “NORMAL” position.
3. Hold “ENGINE START” switch in “REAR START” position to engage starter. Return switch to “NORMAL” as soon as engine starts. Use the same precautions regarding use of starter as explained under “Starting the Engine” at front on page 9.



Engine Rear Control Panel

Caution

If necessary to work on engine without engine running, place “ENGINE CONTROL” switch in “OFF” position. This breaks circuit to starter and prevents accidental starting of engine. After work has been completed, place “ENGINE CONTROL” switch in “NORMAL” position and “ENGINE START” switch in “NORMAL” position before closing compartment door.

Stopping Engine at Rear

Place “ENGINE CONTROL” switch in “OFF” position. After engine has stopped, return switch to “NORMAL” position. If engine is not to be restarted immediately, place “ENGINE START” switch in “OFF” position.

Important

In emergency only, if “ENGINE CONTROL” switch does not stop engine, push in emergency stop solenoid plunger with fingers to release the choke valve cam. Reset emergency stop after engine has stopped (page 12).

EMERGENCY CONDITIONS (Cont.)

Engine Oil Pressure Low

In the event the engine lubricating oil pressure drops below four pounds during operation, the alarm buzzer will sound, the "LOW OIL" tell-tale will be illuminated, and the safety control relay will stop the engine. Stop the vehicle and turn "ENGINE" switch to "STOP" position. Method of checking and replenishing engine crankcase oil is described on page 26. The safety control relay alarm system can be overruled as explained under "Engine Alarm System."

Generator Not Charging

If needle of "VOLTS" gauge (6, on page 2) moves to left-hand "RED" segment of band, indicating that generator is not charging, turn off all electrical accessories (except necessary lights at night). If necessary to continue driving coach to point of service with generator not charging, leave all electrical accessories except necessary driving lights off.

Engine Overheated

If engine becomes overheated during operation, the alarm buzzer will sound, the "WATER" tell-tale will be illuminated, and the safety control relay will stop the engine. Stop the vehicle and turn "ENG." switch to "STOP" position. Check for cause of overheating condition. Refer to page 22 for instructions on replenishing water in cooling system. The safety control relay alarm system can be overruled as explained under "Engine Alarm System" on page 12.

Transmission Oil Pressure Low

If tell-tale marked "TRANS OIL" on gauge panel lights up during operation, it indicates that transmission oil pressure is low. Stop coach, determine cause and correct before proceeding.

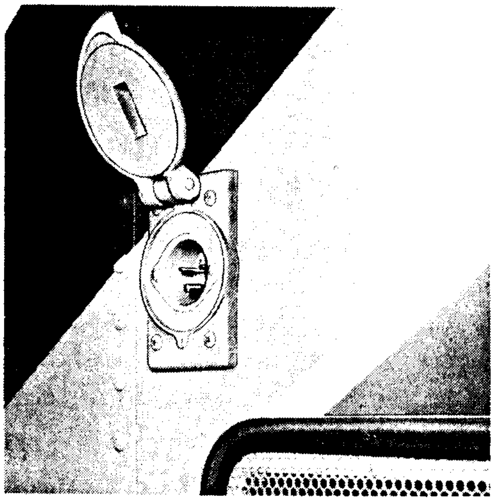
Important

As previously stated, these coaches are equipped with gauges, tell-tale lights, and warning devices which warn the operator of abnormal operating conditions. As indicated by these devices, take the necessary steps to avoid trouble before any serious damage occurs. Get the INSTRUMENT BOARD HABIT — It's a good practice.

"IN-STATION" CONNECTIONS

Some coaches are equipped with "IN-STATION" lighting and climate control connections.

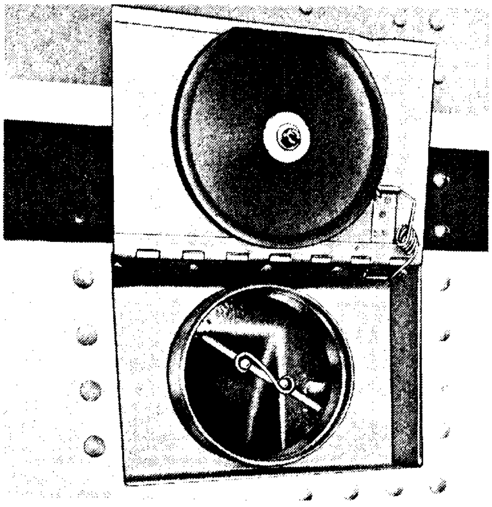
Lighting System



Electrical Supply Plug

The lighting system consists of overhead fluorescent lights (three on 4108 models and four on 4905 models) and baggage compartment lamps. To make system operative an electrical source wire is plugged into receptacle located at left side of coach just below and ahead of the first long side window. There is no "ON-OFF" switch in the coach to control lighting. With source wire plugged in the system is "ON"; to turn "OFF", pull source wire from plug. The receptacle cover is spring loaded and has a sealing gasket to automatically protect plug from the weather when source wire is removed. For safety, use a three-unit socket to ground system.

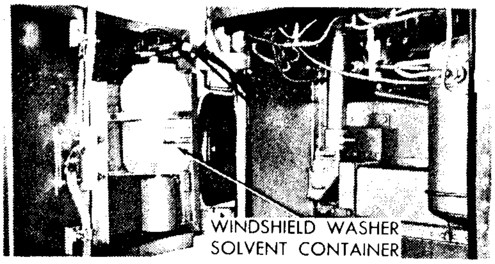
Climate Control System



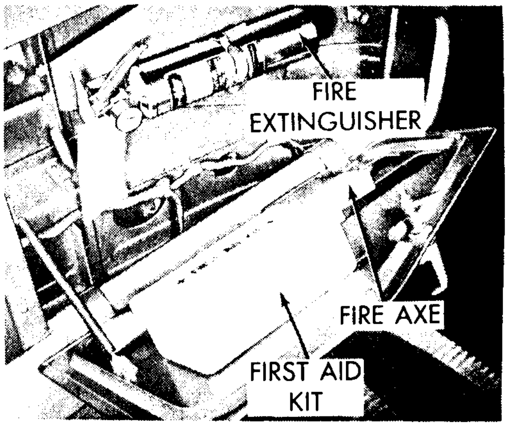
Heating and Air Conditioning Connection

The climate control system consists of a connector tube which is an integral part of the internal air flow system. This connection is located slightly below and to the rear of the lighting system receptable on the left side of the coach. To open access door, turn handle in center counterclockwise and lift spring loaded door. Spring will hold door in either open or closed position. Connect station heating and cooling source tube to connector. There are no internal "ON-OFF" controls within the coach.

TOOLS AND SAFETY EQUIPMENT



Windshield Washer Compartment



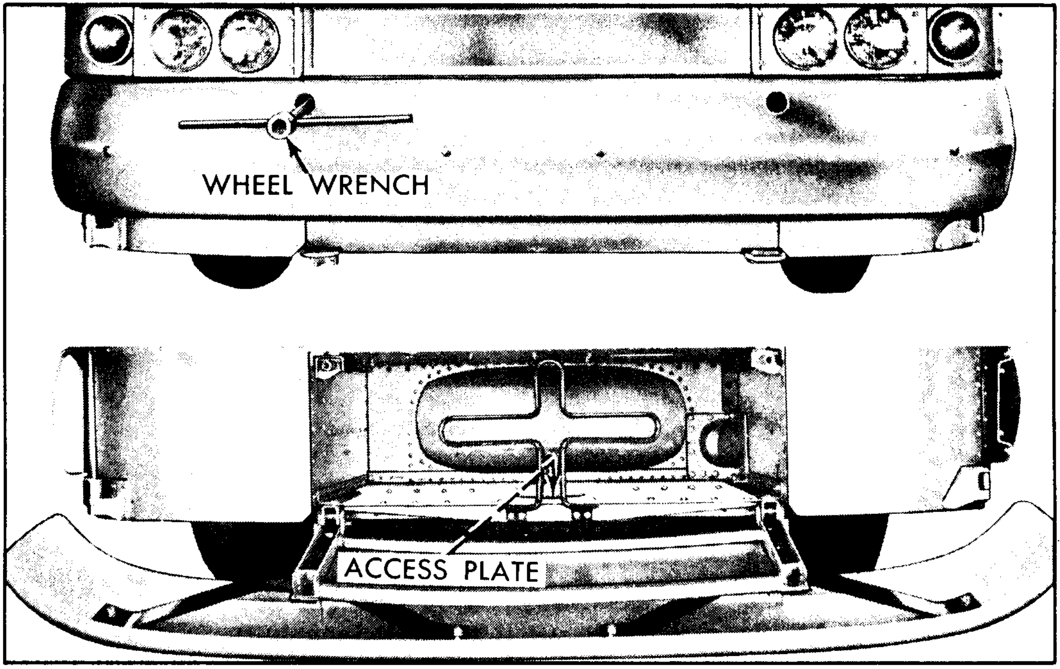
Location of Equipment in Dash Compartment

Standard vehicle tools, such as wheel nut wrench, wrench handle, wrench handle extension, and jack handle, are stored in a tool tray in the main air tank compartment (22, page 30) on 4108 Models and in the windshield washer compartment (4, page 30) on 4905 Models. Make sure tools are in place in the tray provided; do not leave tools or parts loose in compartment.

A fire extinguisher is clamp-mounted inside the dash compartment. Instructions for operation are on instruction plate of extinguisher.

A fire axe and first aid kit are mounted on the dash compartment door.

SPARE WHEEL AND TIRE



Spare Tire Compartment is Behind Front Bumper

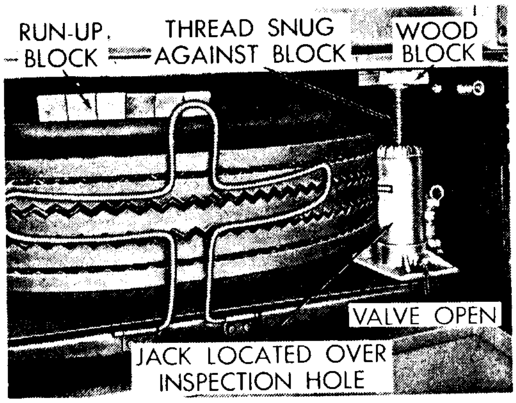
SPARE WHEEL AND TIRE (Cont.)

Spare wheel and tire is stowed in compartment behind front bumper (3, page 30). Small access plate in floor of compartment can be opened to check and inflate spare tire without removing wheel and tire from compartment. Insert wheel nut wrench through openings in bumper and unscrew retaining bolts. Front bumper and compartment door may then be lowered as shown on page 41.

Important

Make sure that both retaining bolts are tightened firmly after closing compartment door.

JACK STORAGE



Jack Storage

The jack is carried in the spare tire compartment at the front of the coach. When locating jack in compartment, open jack height control valve allowing jack to lower to minimum height. Place base of jack directly over inspection hole in floor of compartment, then with a wooden block over top of jack thread jack extension upward to apply a light load on coach structure to hold jack in place. Do not tighten excessively. The presence of the jack in its installed position can be checked without opening the compartment by feeling for jack base from below coach through small hole in compartment floor.

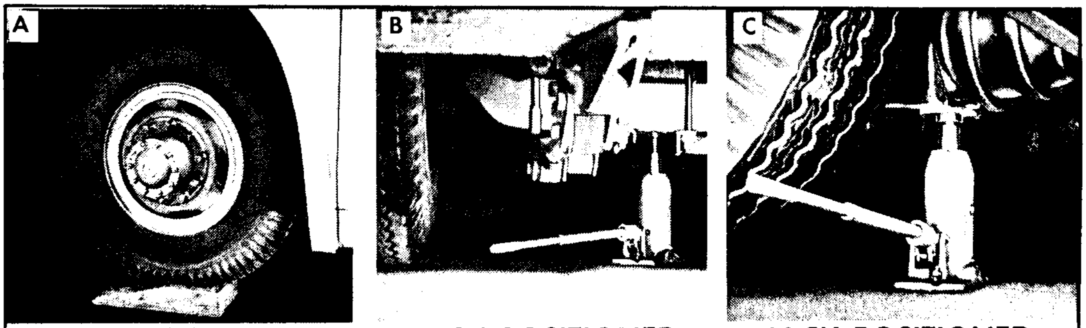
If run-up wooden blocks are provided they may be stored in the center of the spare wheel.

CHANGING WHEELS

To Change Front Wheel and Tire—Place wooden run-up block in front of deflated tire. Drive vehicle onto block to permit positioning of jack under front axle (see view B page 43). Apply parking brake, then raise vehicle. Remove run-up block and proceed to change wheel and tire.

To Change Outside Dual—Place wooden run-up block at inside tire, then drive vehicle onto block to raise outside dual off ground as shown at view A above. Apply parking brake, then proceed to change wheel and tire.

CHANGING WHEELS (Cont.)



USE OF RUN-UP BLOCK

JACK POSITIONED UNDER FRONT AXLE

JACK POSITIONED UNDER REAR JACK PAD

Use of Jack and Run-up Block

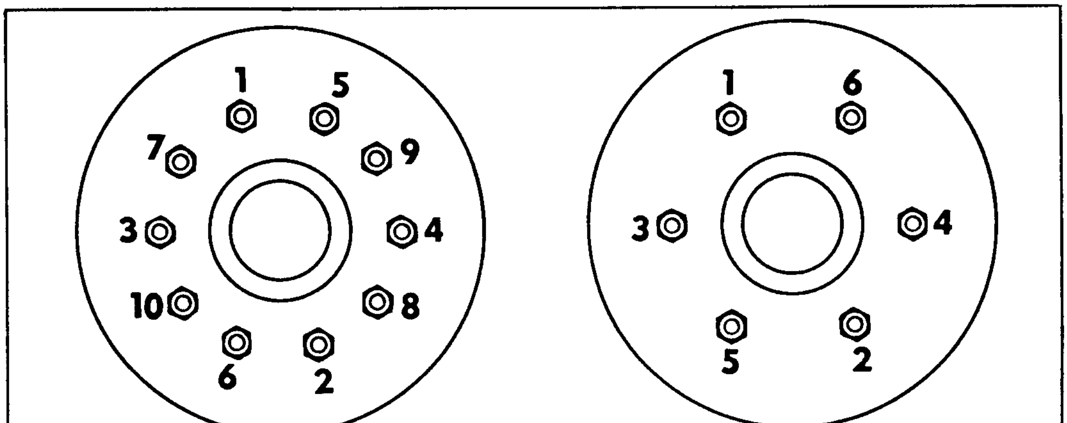
To Change Inner Dual—Apply parking brake. Position jack under jack pad on suspension support (view C above). Jack up axle and proceed to change wheel and tire.

To Change Retractable Axle Wheel—Refer to page 29 for instructions covering retractable axle.

WHEEL NUT TORQUE

Improper tightening sequence and improper wheel nut torque can result in wheel distortion and wheel run-out. Run all nuts in lightly, following sequence shown, so that wheel will position itself concentrically with hub. Tighten nuts progressively, but not completely at one time, moving from one to another until torque limit is reached.

	Torque
Front and Rear Wheel Stud Nuts	**550-625 ft.-lbs.**
Retractable Wheel Stud Nuts	**300-350 ft.-lbs.**



FRONT AND REAR WHEELS

RETRACTABLE AXLE WHEELS

ANTI-FREEZE CHART

Engine cooling system should be protected with anti-freeze solutions for temperatures below 32°F. Only ethylene-glycol type anti-freeze should be used. The chart below shows quarts of anti-freeze to be used for protection to various temperatures, based on the total capacity of the engine cooling system and the heating system (92 quarts).

Lowest Expected Temp.	Quarts of Ethylene-Glycol
+10°	23
0°	30½
−10°	35
−20°	39½
−30°	43½

When water filter is used it is important to use correct filter element (identified by the letters P.A.F. after the model numbers). This element is designed for use with permanent type anti-freeze used in these vehicles.

Important

Some permanent anti-freezes contain inhibitor which produces a green residue. If noted, change element oftener. If this does not correct condition remove element or disconnect filter.

GENERAL DATA

Vehicle Height (maximum)	**131½ inches**
Vehicle Width	**95¾ inches**
Tire Size (Standard—Front and Rear)	**12.00:22.5**
(Standard—Retractable Axle)	**(Tubeless) 8.00:22.5**
Fuel Tank Capacity	**(std.) 145 gal. (special equip.) 165 gal.**
Cooling System Capacity (including heating system)	**92 qt.**
Engine Crankcase Capacity	**28 qt.**
Hydraulic Steering System Capacity	***6 qt.**
Transmission Capacity	***11½ qt.**
Rear Axle Capacity	**22 pts.**

(*) When filling or adding oil, fill to "FULL" mark on dipstick.

LIGHT BULB DATA
(MODEL PD-4108)

Name	Qty.	Candlepower or Watts	Trade No.
Front Corner Marker Lamps	2	6	623
Front Identification Marker Lamps	3	3	1251
Side Identification Marker Lamps	2	6	623
Headlamp #1 Sealed Beam	2	50W	4619
Headlamp #2 (Upper) Sealed Beam	2	50W	4624
Headlamp #2 (Lower) Sealed Beam	2	50W	4624
Frt. Directional Signal Lamps	2	32	1683
Side Directional Signal Lamps	2	32	1683
Entrance Door Lamp	1	21	1203
Driver's Lamp	1	15	1692
Speedometer Gauge Lamp	1	2	456
Oil Gauge Lamp	1	2	456
Air Gauge Lamp	1	2	456
Temperature Gauge Lamp	1	2	456
Voltmeter Gauge Lamp	1	2	456
Tell-Tale Lamps	9	–	1090-D92
Switch Panel Lamps	2	.34	334
Destination Sign Lamps	4	15	1691
"Watch Step" Warning Lamps	2	6	212
Reading Lamps	36	15	1691
General Lamps	12	15	1309
Package Rack Night Lamps	2	2	456
Seat Night Lamps	3	2	456
Lavatory Occupied Sign Lamps	2	2	456
Lavatory Lamp	1	–	24-T-12
Entrance Door "Watch Step" Lamps	2	2	456
Baggage Compartment Lamps	4	21	1203
Engine Compartment Lamps	4	15	1691
Freon Tank Lamp	1	15	1691
Rear Corner Marker Lamps	2	6	623
Rear Identification Marker Lamps	3	3	1251
Stop, & Direct. Signal Lamps	4	32	1683
Backup Lamps	2	32	1683
Rear License Lamps	2	3	1251
Tail Lamp	2	3	1251

LIGHT BULB DATA
(MODEL PD-4905)

Name	Qty.	Candlepower or Watts	Trade No.
Front Corner Marker Lamps	2	6	623
Front Identification Marker Lamps	3	3	1251
Side Identification Marker Lamps	2	6	623
Headlamp #1 Sealed Beam	2	50W	4619
Headlamp #2 (Upper) Sealed Beam	2	50W	4624
Headlamp #2 (Lower) Sealed Beam	2	50W	4624
Frt. Directional Signal Lamps	2	32	1683
Side Directional Signal Lamps	2	32	1683
Entrance Door Lamp	1	21	1203
Driver's Lamp	1	15	1692
Speedometer Gauge Lamp	1	2	456
Oil Gauge Lamp	1	2	456
Air Gauge Lamp	1	2	456
Temperature Gauge Lamp	1	2	456
Voltmeter Gauge Lamp	1	2	456
Tell-Tale Lamps	9	—	1090-D92
Switch Panel Lamp	2	.34	334
Destination Sign Lamp	4	15	1691
"Watch Step" Warning Lamps	2	6	212
Reading Lamps	44	15	1691
General Lamps	14	15	1309
Package Rack Night Lamps	2	2	456
Seat Night Lamps	3	2	456
Lavatory Occupied Sign Lamp	2	2	456
Lavatory Lamp	1	—	24-T-12
Entrance Door "Watch Step" Lamps	2	2	456
Baggage Compartment Lamps	6	21	1203
Engine Compartment Lamps	4	15	1691
Freon Tank Lamps	1	15	1691
Rear Corner Marker Lamps	2	6	623
Rear Identification Marker Lamps	3	3	1251
Rear Directional Signal Lamps	2	32	1683
Rear Stop Lamps	2	32	1683
Rear Tail Lamps	2	3	1251
Backup Lamps	2	32	1683
Rear License Lamps	2	3	1251

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